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ORIGINAL COMMUNICATIONS.

Experimental Researches applied to Physiology and Pathology.
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(Continued.)

XVII.—ON THE INFLUENCE OF THE TEMPERATURE OF A WARM-BLOODED ANIMAL UPON THE DURATION OF ITS LIFE WHEN IT IS ASPHYXIATED.

One of the most positive facts in physiology is that every animal needs oxygen in order to live. But if there is a complete uniformity as to the necessity of oxygen for all animals, there is also the greatest variety between the different species as to the quantity of that gas which is necessary for the maintenance of life. Very probably a great part of the physiological differences between different animals, comes from the difference in the quantity of oxygen absorbed by their blood in a given time. The most important cause of the differences existing between cold and warm-blooded animals, and between young and

adult animals, is to be found in the differences in the quantity of oxygen they absorb.

It is very remarkable that one of the principal laws relative to the anatomical differences existing between the different species of animals, appears to be also a law regulating their physiological differences. In an anatomical point of view, a mammal, at the different periods of its development, presents alternately the forms of many different beings. In a physiological point of view, a corresponding transformation occurs for the mammals. They exhibit alternately the same phenomena of life exhibited by many other different animals. For instance, before its birth, the mode of breathing of a mammal is the same as that of fishes. The oxygen absorbed by fishes exists in a liquid; the oxygen absorbed by the mammal foetus exists also in a liquid, which is the blood of the mother. In fishes and also in mammal foetuses, oxygen has to pass through many membranes: in fishes, through the mucous membrane of the bronchiæ and the membrane of the capillary vessels; in the mammal foetuses, through the membranes of the capillary vessels of the maternal and the foetal placentas, and their mucous coverings. After birth young mammals have an insufficient power of breathing, and in this they are like the reptilia. They are unable to absorb a sufficient quantity of oxygen to resist the influence of cold; and their power of retaining life when deprived of oxygen, is comparable to that of the reptilia.

This fact has been well established by the experiments of Buffon, Boyle, Ens, Roose, Haller, Fontana, Legallois, and more particularly W. F. Edwards. Nevertheless, these eminent experimenters have left many important questions without solution, some of which I will examine here.

In order to study the influence of temperature on the duration of life in asphyxiated animals, W. F. Edwards dipped into water, at different degrees of temperature, many animals of different ages. Unhappily he did not take notice of the temperature of the animals on which he experimented; and we will show that this circumstance is very important, because the degree of that temperature at the instant when asphyxia begins, has a considerable influence on the duration of life. Consequently, to discover with exactitude the influence of the tempera-

ture of a medium, on animals deprived of breathing, it was necessary to operate on animals at the same temperature. This has been done neither by Edwards nor by any other physiologist.

A priori it is easy to acknowledge that the duration of life in animals asphyxiated can be influenced by four capital circumstances: 1st. The degree of the temperature of the animals; 2d. The degree of the temperature of the medium; 3d. The age of the animals; 4th. Their species.

Consequently four series of experiments were to be performed. I have made them, and I propose to give here some of the results I have obtained. The remaining shall be detailed in a special paper.

I. *Influence of the Temperature of young warm-blooded animals on the length of their resistance to Asphyxia.*

Experiment 1. Nine rabbits of the same brood and aged about two days, were dipped into water at 25° Cent. (77° Fahr.) Two of these animals, No. 1 and No. 2, had the temperature which they generally have when they are in their nest covered by their mother. The others had been cooled by having been exposed to the action of an atmosphere at 10° Cent. (50° Fahr.) No. 3 and No. 4 had been exposed for a quarter of an hour; No. 5 and No. 6 for three quarters of an hour; and No. 7, No. 8 and No. 9 for an hour and a half. The results are represented in the following table:

TABLE I.*

Nos.	Temperature of Animals.		Duration of Life.	Mean Duration of Life.
1,	35° to 36° Cent.	(95 to 97° Fahr.)	10'	12'
2,	ditto	ditto	14'	
3,	29° to 30° Cent.	(84° to 86° Fahr.)	16'	18½'
4,	ditto	ditto	21'	
5,	23° to 24° Cent.	(74° to 75° Fahr.)	20'	23'
6,	ditto	ditto	20'	
7,	18° to 19° Cent.	(65° to 66° Fahr.)	22'	28'
8,	ditto	ditto	29'	
9,	ditto	ditto	33'	

The one that lived shortest (10',) was nearly at 36° Cent.

* The existence of reflex movements has been used in this experiment and in all the others as the proof of life.

(97° Fahr. ;) the one that lived the longest (33',) was nearly at 18° Cent. (65° Fahr.) The difference of temperature being 17° or 18° Cent. (about 32° Fahr.) the difference as to the duration of life was 23 minutes—that is, nearly two minutes for each diminution of three degrees Fahr.

The same experiment performed on many breeds of rabbits, has always given very nearly the same results.

These experiments prove that the temperature of young rabbits has a decided influence upon the duration of their life, when they are deprived of breathing. I have ascertained that the same thing takes place in cats, dogs, mice, and many species of birds.

Experiment 2. I dipped into water at the temperature of 25° Cent. (77° Fahr.) three bull-dogs.

TABLE II.

Nos.	Temperature of Animals.				Duration of Life.
1,	.	38° Cent. (about 101° Fahr.)			. 15'
2,	.	30	"	86	" . 24'
3,	.	22	"	77	" . 47'

Between No. 1 and No. 3 the difference of temperature was 16° Cent. (29° Fahr. ;) the difference in the duration of life was thirty-two minutes—that is, two minutes for each diminution of one centigrade degree (nearly 2° Fahr.)

Experiment 3. I put a ligature around the trachea of four cur-dogs of the same brood, and aged three days.

TABLE III.

Nos.	Temperature of Animals.				Duration of Life.
1,	.	37° Cent. (about 99° Fahr.)			. 13'
2,	.	28	"	83	" . 19'
3,	.	24	"	76	" . 31'
4,	.	19	"	67	" . 51'

So that between the two extremes the difference as the duration of life, was 38 for 18 Cent. (about 32° Fahr.)

Many other experiments on very young dogs gave very nearly the same results.

Experiment 4. On five cats, of the same brood, and aged two days, I put a ligature around the trachea, after having cooled three of them.

TABLE IV.

Nos.	Temperature of the animals.	Duration of life.	Mean duration.
1,	36° Cents., (about 97° Fahr.)	21'	25½'
2,	36 " " 97 "	30 }	
3,	23 to 24 Cent., (74 to 76 Fahr.)	47 }	48½'
4,	22 to 23 Cent., (72 to 75 Fahr.)	50 }	
5,	17 Cent., (about 63 Fahr.)		53

The temperature of the air was then at 18¼° Cents., (65 Fahr.)

Experiment 5. On four mice, probably aged from three to eight days, I put a ligature around the trachea after having cooled three of them.

TABLE V.

Nos.	Temperature of the animals.	Duration of life.
1,	34° Cents., (about 94° Fahr.)	11'
2,	27 " " 81 "	14
3,	22 " " 72 "	10
4,	18 " " 65 "	14

I have obtained analogous results in experimenting on birds.

Experiment 6. On seven magpies, aged from four to eight days, I put a ligature around the trachea, and opened widely the thoraco-abdominal cavity.

TABLE IV.

Nos.	Temperature of the animals.	Duration of life.	Mean duration.
1,	36° Cent., (about 97° Fahr.)	20' }	24,
2,	36 " " 97 "	28 }	
3,	32 " " 97 "	26 }	32½
4,	31½ " " 90 "	39 }	
5,	26 " " 79 "	12 }	50
6,	26 " " 79 "	58 }	
7,	22 " " 72 "		72
8,	20 " " 68 "	65 }	76
9,	20 " " 68 "	87 }	
10,	18 " " 65 "	82 }	92
11,	10 " " 65 "	103 }	

Experiment 7. On other magpies I made the same experiment, but without opening the thoraco-abdominal cavity, so that asphyxia was much more complete.

TABLE VII.

Nos.	Temperature of the animals.	Duration of life.
1,	35° Cent., (95° Fahr.)	8'
2,	30 " 86 "	15
3,	24 " 76 "	27
4,	19 " 67 "	39

I have obtained nearly the same results from experiments upon many sparrow-hawks, ravens and jays.

All these facts show how considerable is the influence of the temperature of certain young animals and birds on the duration of their life when they are asphyxiated.

II. *Differences in the length of the resistance to asphyxia according to the species of animals.*

In order to discover what is the influence of the species, I made the following experiment. I tied the trachea on twenty-two animals belonging to eleven species, all of which were aged about four or five days. Their temperature had been cooled and they were all at about 26° Cent., (79° Fahr.) The temperature of the air was 19° Cent. (67° Fahr.)

TABLE VIII.

Nos.	Species.	Duration of life.	Mean duration of life
1,	Rabbit	18'	21'
2,	do.	24	
3,	Guinea pig	6	7½
4,	do.	9	
5,	Mouse	20	23½
6,	do.	27	
7,	Dog	25	32
8,	do.	39	
9,	Cat	31	33½
10,	do.	36	
11,	Sparrow	8	10
12,	do.	12	
13,	Pigeon	5	7
14,	do.	9	
15,	Jay	13	15
16,	do.	17	
17,	Raven	14	18½
18,	do.	23	
19,	Sparrow Hawks	16	20
20,	do.	24	
21,	Mag-pie	18	22½
22,	do.	25	

Now if we compare birds to mammals, we see that generally mammals resist asphyxia more than birds. The two following tables show the difference :

TABLE IX.

Mammals.			
Guinea-pigs	.	.	7½'
Rabbits	.	.	21
Mice	.	.	23½
Dogs	.	.	32
Cats	.	.	33½
Average			23½

TABLE X.

Birds.			
Pigeons	.	.	7'
Sparrows	.	.	10
Jays	.	.	15
Raven	.	.	18½
Sparrow Hawks	.	.	20
Mag-pies	.	.	21½
Average			15½

III. *Influence of the temperature of adult warm-blooded animals on the duration of life when they are asphyxiated.*

I have discovered that the degree of the temperature of adult non-hybernating vertebrata has also a great influence on their power of resisting asphyxia. Dogs, cats, rabbits, guinea-pigs and birds, are subject to the same law when they are adult as when they are very young. The lower their temperature, the longer they live when they are asphyxiated. But although the existence of this law for adult vertebrata is beyond all doubt, it is sometimes very difficult to ascertain that existence. It is not easy to diminish the temperature of a non-hybernating adult mammal, or that of a bird, without exhausting the nervous and the muscular power of the animal, and also without producing a general and considerable perturbation. The action of a cold bath, for instance, so powerfully excites the vertebrata, that sometimes violent convulsions take place, and then death may occur in a short time, even before the animal has lost 10° cent. (18° Fahr.) of its temperature. However, some individuals may be cooled without being exhausted by convulsions. I have experimented on a great many which were in this condition. For more than eight years, without intending to make experiments on this subject, I have had the opportunity of stating, on more than a hundred adult rabbits or guinea-pigs, used for other researches, that, when their temperature is diminished, the duration of their life, when they are completely deprived of breathing, is decidedly longer than in the normal state. Whatever has been the cause of the cooling, the effect has been the same. In these numerous experiments, the animal heat has been diminished, either by a disease, by a poison, by an injury in the nervous

centres, by the immersion of the animal in melted ice, or by the application of a layer of oil, essence, or gelatine, to the whole skin of the animal.

The best mode of cooling a non-hybernating warm-blooded animal is to make the following experiment, in a room where the temperature of the air is not far from freezing point. I remove the superior part of the cranium of a mammal or of a bird, and afterwards cut the brain, slice by slice, from the anterior to the posterior extremity. After the ablation of the cerebrum and the cerebellum, the animal is put on the floor, where it is left perfectly quiet for an hour or two. If the experiment is made on a rabbit or a guinea-pig, the temperature of the animal then falls from 40° Cent. (104° Fahr.) to 30° or 35° Cent. (86 or 95° F.) A ligature being put around the trachea, I find that the animal is then able to live generally from six to 8 or 12 minutes.

The more the animal heat is diminished, the more, in general, is the resistance to asphyxia, except in cases where cooling has been produced too quickly.

On four adult rabbits, I put a ligature around the trachea, and have obtained the following results :

TABLE XI.		
Nos.	Temperature of the animals.	Duration of life.
1,	$39\frac{1}{2}^{\circ}$ Cents., (103° Fahr.)	$3\frac{1}{2}'$
2,	35 " 95 "	6
3,	$30\frac{1}{2}$ (between 86 and 87 Fahr.)	10
4,	25 Cents., (77 Fahr.)	14

On three guinea-pigs I put a ligature around the trachea, and found the following facts :

TABLE XII.		
Nos.	Temperature of the animals.	Duration of life.
1,	40° Cents., (104° Fahr.)	$2\frac{3}{4}'$
2,	35 " 95 "	$5\frac{1}{2}$
3,	30 " 86 "	12

The longest persistence of life, after the cessation of breathing which I have found in adult non-hybernating animals, has been in a cat aged five months, and whose temperature had been diminished to 19° Cent. (about 67° Fahr.) in consequence of the laying bare of the abdominal viscera, and of the ablation of the cerebrum by small parts.

I will say only a few words about my experiments on adult birds.

Two pigeons were dipped into melting ice. In one of them, whose temperature had fallen from 42° Cent. (108° Fahr.) to 35° Cent. (95° Fahr.) life lasted six minutes after the ligature of the trachea. In the other, life lasted nine minutes; its temperature had fallen from 42° Cent. (108° Fahr.) to 30° Cent. (86° Fahr.)

I have obtained nearly the same results in experimenting on fowls and on ducks.

Physicians are generally astonished at seeing that men attacked with cholera are able to live almost without breathing. My experiments show that the principal, if not the only cause of the power living with so deficient a respiration, is the diminution of temperature. The same thing occurs in the last hour of life in many cases of diseases, and particularly those of the brain, of the respiratory organs, and in that dreadful disease of children called *scleroma*.

It is easy to understand how a considerable breathing becomes less and less necessary when the temperature of the animals under experiment is diminishing.

Whatever may be the function of oxygen, it is positive that most of the chemical changes which take place in the living animals are accompanied with a consumption of oxygen. If so, when these chemical changes are diminished, the consumption of oxygen ought to diminish. Now, as every diminution of the temperature of an animal produces a proportionate diminution in nearly all the acts of organic and animal life, and as these acts are all accompanied by chemical changes in which oxygen is consumed, it follows that, when they diminish, the consumption of oxygen also diminishes.

In the act of running, or in a rapid walk, we consume much more oxygen than in a state of rest. What we call rest is merely a state of diminished activity; and when the temperature of a mammal has been cooled down, the activity of most of the functions is much more diminished than in the most complete rest. It results from this fact, that when a warm blooded animal has lost a notable part of its ordinary warmth, its consumption of oxygen is much less than in a state of rest.

If the ligature of the trachea is made simultaneously on two adult mammals of the same species, one of them being at its normal temperature, and the other at a temperature of 5° Cent. (9° Fahr.) lower, we observe that this last one lives six, seven or eight minutes, and the other from one and a half to three minutes. If we suppose the quantity of oxygen existing in the lungs and in the blood of these two animals is precisely alike in both; and if we admit that death occurs in asphyxia, either from want of oxygen or by an action of carbonic acid, in both cases these two animals ought to live a different length of time, because the consumption of oxygen contained in blood and the production of carbonic acid are quicker in one of them than in the other. This explanation is so true, that when movements are excited in the cooled animal, after the beginning of asphyxia, it dies sooner than when it remains in rest.

From the facts and reasonings which are related in this note I draw the following conclusions:

1st. The temperature of newly-born warm-blooded animals has a great influence on the duration of their life when they are asphyxiated.

2d. There are very considerable differences in the duration of life in asphyxiated animals of different species, even when the experiment is performed in the same medium, and while their temperature is at the same degree.

3. The degree of the temperature of adult warm-blooded animals has also a great influence on the duration of their life when they are asphyxiated.

4th. The influence of the animation of the temperature of a warm-blooded animal on the duration of its life in asphyxia, explains the persistence of life in man, in cases of cholera, scleroma, and of some other diseases, when respiration is much diminished.

XVIII.—ON THE CENTRAL SEAT OF GENERAL AND OF TACTILE SENSIBILITY, AND ON THE VALUE OF CRIES AS MANIFESTATIONS OF PAIN.*

To determine where is the seat of perception and of volition is one of the greatest physiological questions. Flourens maintains

* See *Comptes Rendus de l'Acad. des Sciences*, 1849. t. xxix. p. 672.

that this seat is in the central lobes. Many physiologists, among whom are Bouillaud, Gerdy and Longet, have published papers against the doctrine of Flourens. Their only important argument is that mammals deprived of their whole encephalon, except the medulla oblongata and the pons varolii, continue to possess the faculty of perceiving sensations, and that the perception of pain is then manifested by cries and agitation. When the encephalon, says Longet,* is so much mutilated, in rabbits and dogs, that only the pons varolii and the medulla oblongata remain, in the cranial cavity, these animals, although they seem to be in a deep coma, are still able to agitate themselves, and to cry plaintively, under the influence of strong external irritations; but if a sufficiently deep alteration is made in the pons varolii there is an immediate cessation of the cries and of the agitation; it merely remains an animal in whom the circulation, the respiration and the other nutritive functions are momentarily accomplished.

On cats, rabbits and guinea-pigs, I have obtained a completely different result in performing that experiment. After I had removed, slice after slice, and from forwards backwards, the whole encephalon, except only the medulla oblongata, I have found that the mutilated animal, not only is much agitated, but cries plaintively when it is pinched. If the medulla oblongata is also removed, the cries cease, but the agitation still continues.

According to these experiments, it is evident that the pons varolii is not the only *seat of sensibility, the centre of perception of tactile impressions*, as Longet calls it, and that either the medulla oblongata is the seat of general sensibility or the cries do not prove that there is a perception.

Longet considers that the pons varolii is not only the centre of perception for sensation of pain, but also for tactile impressions. As to the tactile sensations he does not give the slightest appearance of proof. Certainly neither the cries nor the agitation are sufficient to authorize the opinion that the animal has felt a sensation of tact. If the existence of cries could prove that there is a perception of a tactile sensation, I should have to conclude from my experiments that the medulla oblongata is the seat of

* *Traite de Physiol.* Paris. 1850. t. ii, B. p. 38.

the faculty of perception of tactile sensations, for there are cries after the removal of the whole encephalon except the medulla oblongata, and there are no more after the removal of this last organ. If, instead of drawing conclusions from the existence of cries, we take notice only of the agitation, we are bound to conclude that the spinal cord is the seat of the faculty of perception of tactile sensations, for after this organ has been separated from the medulla oblongata, agitation takes place when a limb is pinched.*

Cries and agitation may be attributed to a property of the nervous centres, which is completely different from the faculty of perception of painful or tactile sensations. That property is the reflex faculty of the true spinal marrow;† it is the property of uniting, in co-ordinate movements isolated muscular contractions,‡ which is called by German physiologists the faculty of adaptation to an end. That property manifests itself by movements similar to those executed by unmutilated animals when they feel a pain; and it happens, sometimes, that these reflex movements are less disordered than the movements consecutive to a violent pain in an unmutilated animal. The *agitation* of the animals deprived of all the parts of their encephalon is merely the result of an action of the reflex faculty.

The cries also appear to exist only in consequence of a reflex action. This appears to be difficult to be proved, and it will seem nearly impossible to admit that cries may be produced by an animal that has felt no pain, or that has not had the will of crying. We may consider a cry as a noise produced in the larynx, as many times a quick expiration is performed when the vocal cords are stretched. Now as the tension of these cords and the expiration is produced by muscular contractions, it is easy to understand that these contractions are produced by a reflex action as well as the contractions of the muscles of the limbs.

For those who know that hiccup, coughing, sneezing, vomiting

* This conclusion is maintained as true by Sénac, Caldani, Kay, Legallois, Paton, J. W. Arnold and many others.

† As Dr. Marshall Hall calls it.

‡ That is the name given by Flourens more than 25 years ago.

and so forth, frequently are mere reflex phenomena, there ought to be no difficulty in admitting that crying is a pure reflex action.

If we here use the expressive language of Flourens, we will say, that the medulla oblongata has the faculty of uniting in a co-ordinate movement, the contractions of the expiratory muscles and that of the tensor muscles of the glottis.

From the facts and reasonings contained in this note I will now draw the following conclusions :

1st, That the experiment by which many physiologists have endeavored to prove that the cerebral lobes are not the exclusive seat of the perceptions, do not give such a proof.

2d, That animals can cry after the removal of the whole encephalon, except only the medulla oblongata.

3d, That the existence of cries cannot prove that there is a perception of pain, because cries result from muscular contractions which may be pure reflex actions.

4th, That there is no proof that the pons varolii is the centre of perceptions either of touch or of pain.

5th, That if it is admitted that cries prove that there is a perception of pain, we should have to admit that the medulla oblongata is also a centre for these perceptions.

(To be continued.)

Three Cases of Tape-Worm, with Remarks. By HENRY S. PATTERSON, M. D., Professor of Materia Medica and Therapeutics in Pennsylvania Medical College.

CASE I. *Successful use of Kwoosso.*—Miss W., æt. 22 years, consulted me in March, 1851, with tape-worm. She had been in failing health for several months, with headache, languor, variable appetite, nausea, and abdominal pains, but had not sought medical advice. Having taken a dose of citrate of magnesia, she observed in her discharges something peculiar, which proved to be joints of *tænia solium*. As I was at that time expecting some kwoosso from Europe, I postponed treatment until it should arrive. Early in April it came, and was administered during my absence from the city by my friend Dr. Gilbert. He

gave the dose (3vj.) at once, the patient having fasted from the previous day. It excited some nausea but no vomiting. It was followed, in a few hours, by a dose of castor oil, which brought away a tape-worm several yards in length, but which unfortunately was not preserved for more minute examination. There can be no doubt, however, that the entire worm was expelled, as the patient rapidly convalesced, and has been in the enjoyment of uninterrupted health since that period.

CASE II. *Failure of Kusso. Successful use of Pumpkin-seeds.*—The subject of this case was for some time under my care, in consultation with my colleague, Dr. Darrach. I can aver that he was most thoroughly put through the entire routine of tape-worm remedies, before he left Philadelphia. He tells his own story so well, that I prefer to give the following extract from a letter announcing his restoration to health. "In the early part of January, 1836, I was rather suddenly attacked with what seemed to be an alarming diarrhoea, which continued for some weeks, resisting the usual remedies. My symptoms had been peculiar for some time previous to the attack. Indeed I had all the prominent symptoms of tænia as laid down in the books: viz., dizziness; occasional false vision; variable appetite; pain in the lumbar region; pain in the knee-joint; swelling of the abdomen; hesitancy of speech; restlessness in time of sleep; unusual drowsiness during the day; varying strength, being sometimes quite strong and then again quite feeble. Somewhere about the middle of February of the same year I discharged, at a morning stool, about nine yards of the tænia. From that time onward, for six years, I was more or less under medical treatment continuously. I took vast quantities of the spts. turpentine, (once or twice two ounces at the dose,) also the malefern, calomel and jalap, and Jayne's vermifuge; and was several times under homœopathic treatment. I took also iodide of potassium, iodide of iron, decoction of pomegranate, and the 'kousso.' I discharged large quantities of the worm, but no head could be perceived. When the kousso failed, I began to despair of being cured at all, but my sister, Mrs. ———, sent me in December last two numbers of the Boston Medical and Surgical Journal, containing two several accounts of the cure of

tænia by the use of pumpkin-seeds. Having previously abstained from usual food for a day, on the 10th of January last I took, at 8 o'clock in the morning, two ounces of the kernels of pumpkin-seeds pulverized with two tablespoonfuls of white sugar, and commingled with a half pint of boiling water, making a very pleasant drink for a fasting man. I kept my bed, drinking frequently of cold water, and at 9½ o'clock I took an ounce of castor oil. At 10½ I drank a cup of hot black tea, and, in about two minutes, discharged about eight yards of the tape-worm, *with the head*. O, how I wept for joy that I was again a free man, after a servitude of six sad years to this awful complaint. Since then, I feel like a new being in a new world. My life had often been a weary burden, and yet I grew fleshy and looked healthful. For months in succession I had discharged the worm daily in pieces of six to eighteen inches, and also in gourd-seed form. I suppose that, without any over-estimate, I discharged during the six years of my affliction about *four hundred yards!* The remedy is very simple. Were I a practising physician I would never administer the turpentine for tape worm; I sometimes fear that I have experienced irretrievable harm to my kidneys from using it. There is virtue in pumpkin-seeds, doctor, even if it be a *Yankee notion*."

CASE III. *Successful use of Xanthoxylon fraxineum.*—For the following curious case I am indebted to my friend Dr. Thomas J. Turner, of Port Richmond. J. R. æt. 41 years, is a workman in a chemical laboratory. In Dec., 1847, whilst a private in the British army in Ireland, he first perceived that he was afflicted with tape-worm. He states that he passed fifteen to twenty joints at almost every stool for a time, and on several occasions as much as thirty feet at once. The surgeon of his regiment treated him with Ol. Terebinth. ʒj. every other day. He also took tin-powder, malefern root, and "every other article he ever heard of." He finally abandoned the hope of a radical cure. The symptom most prominent was a sense of gnawing and beating at the epigastrium in the morning. He was obliged to eat before rising, as he otherwise became faint and "had all sorts of queer feelings." His appetite was insatiable. While at Port Richmond in the autumn of last year, he was

attacked with tertian intermittent fever, for which he was recommended to take an infusion of prickly ash bark in brandy, a popular domestic remedy. He digested an ounce of the bark in a pint of brandy, and drank the whole during the apyrexia. The result was a most copious diaphoresis, as usual, and also some purgation, bringing away the entire worm. He has remained perfectly well since.

I have recorded the above cases, because of the intrinsic interest attached to each, and more especially because they serve to teach us moderation in our laudations of special remedies for tape-worm. There are many substances which, if given at the right time and in the right way, will destroy and expel the *tænia solium*, but there is not one of them which will not frequently disappoint the practitioner. The subject of each of the foregoing cases is vehement in praise of his or her "cure," and yet the judicious practitioner will give either of them in his next case with an abundant reservation of doubt as to the result. Similar accounts of the accidental cure of tape-worm are by no means rare. We have recently had in the medical journals a history (from the *Ann. Univers. of Turin*,) of a case in which a shepherd, to whom valerian had been prescribed for a nervous affection, plucked and took by mistake a quantity of *Conium maculatum*. He came very near losing his life, but fortunately recovered with the loss only of a tape-worm, which revealed the source of the nervous affection in question. The account is headed "Efficacy of *Conium maculatum* in Tape-worm." Is it not true, however, that any acro-narcotic poison, given so close to the verge of life-taking, may dislodge and destroy a parasite in the bowels? I should certainly refuse to admit the conium into the list of anthelmintics on this showing. The remedies used in our cases are fortunately without danger, and may be tried safely.

As to the kwosso, the excitement that attended its introduction appears to have subsided already, and it is to be presumed that the greater part of the 1400 pounds which the nephew of M. Rochet d'Hericourt admitted to Dr. Pereira that that gentleman had in store at Paris, still remains on hand. The first notice of this article I have met with is in the *Annuaire of Bouchardat* for 1841, on the authority of M. d'Abbadie, somewhat notorious in African affairs of late years. It was subsequently brought to

England by Dr. C. T. Beke, and was the subject of a paper read by Dr. Hodgkin at meeting of the British Association at York. (See London Medical Times, October 26th, 1844.) The *Annuaire* of Bouchardat for the same year contains a notice of an attempt at its chemical analysis by Stanislaus Martin. One of the most satisfactory accounts of it is found in a communication from M. Schimpfer, Governor of Adoa, in the *Gazette Med. de Strasbourg*, (Bouchard. Ann. 1849, p. 254.) He informs us that "it never completely expels the worm, or at least that rarely happens." He also states that it is but one of the remedies relied upon in tape-worm by the Abyssinians, and he enumerates eight others. Dr. Beke (to whom I am indebted for an interesting note on the subject,) informs me that the natives with whom he conversed did not rate the kwosso above several of their other remedies. An Abyssinian servant brought to London by Dr. B. was treated by Dr. Hodgkin for tape-worm, first with kwosso, and *afterwards* with Ol. Terebinth. The impression of Dr. B. was that the latter was the more efficacious, though neither finally removed the worm, and the man returned to Africa showing occasional symptoms of its presence. Dr. B. states that the natives who use the article are in the habit of taking a dose every two months. He is also my authority for the orthography kwosso, as best representing the Abyssinian pronunciation.

There can be very little doubt that the recent excitement about the kwosso was, in a great measure, the result of a commercial speculation. It has subsided suddenly, and I presume that the originators of the plan have been disappointed. It is already perceived that, while the kwosso is undoubtedly an active vermifuge, it is by no means so infallible as was represented. On the whole I consider it inferior to the *Oleum Terebinthinæ*, which is perfectly safe when judiciously given, notwithstanding the protest of my correspondent. I have given it constantly in $\bar{3}$ j. doses, or in doses of $\bar{3}$ ss. with an equal quantity of *Oleum Ricini*, and have never seen any ill effect whatever. Should the kwosso be afforded at a reasonable price, it will probably take its place among our established means of cure, but I have no expectation of its being employed at the rate of \$5 for the dose of six drachms.

Notes from my Case-Book. By WM. H. MCKEE, M. D., of Raleigh, North Carolina.

MESSRS. EDITORS,—I offer the following cases from my notebook, and as occasion admits will present such others as I may think likely to be of interest, and repay the trouble of perusal.

Prolapsed Bladder Obstructing Labor.

The subject of the present case was a colored woman, in labor with her third child, of robust and strong constitution. She was taken in labor on Wednesday night, at which time a colored midwife was sent for. She flattered the woman that the labor would soon be over, and all was right. She continued to linger, and suffered greatly, from her account, with cramp. The membranes gave way on Thursday afternoon, at which time she enjoyed a few hours of refreshing sleep. The pains continued, alternating occasionally with intermission of ease; finally, the midwife becoming alarmed, she desired that a physician should be sent for, and on Friday afternoon a very intelligent neighborhood physician, Dr. J. B. Owen, was called in. At the time of his arrival, he found the pains as he thought insufficient, and was about to administer a dose of ergot, but before doing so he made an examination, per vaginam, and found that there was an obstruction to the labor, which was unusual, and requested that I should be sent for. He then gave her an anodyne to procure rest. Accordingly, I was called in on Saturday; the distance was about fourteen miles, and I did not see the patient until one o'clock in the afternoon, she having been in labor some seventy hours. The following was her condition:—pulse 120 and feeble; countenance anxious, and wore a peculiar expression, an aspect of anxiety mixed with distress, and complained of pain in the hypogastric region, with a dragging sensation from the umbilicus, as if she would burst at each pain; skin bathed in a cold and profuse perspiration; tongue red and dry; thirst great; pains strong and forcing; external organs of generation swollen as thick as the wrist, hard, and at each pain blood exuded from the labiæ, they having become very sore, cracked, and dry from the repeated touching of the midwife. On examination, per vaginam, my finger came in contact with a large elastic tumor, filling up

the vagina, so I found it impossible to reach the presenting part of the fœtus. My first impression was, that it was the membranes, being assured that they had given way on Thursday. I inquired the last time she had micturated, and learned that it was about twenty-four hours. With these facts of the case, I pronounced it a case of prolapsed bladder. I first attempted to introduce the catheter, but failed, I am confident, for the want of a proper instrument, and from the frequent appeals of the patient for relief, I introduced a thumb lancet guided by the index finger into the vagina, and tapped the bladder, when immediately followed a large quantity of urine, to the great relief of the patient, and in fifteen minutes thereafter, she gave birth to a large dead male child. The after treatment, which was conducted by Dr. Owen, consisted in anodynes, with cooling drinks, cleanliness and an occasional aperient. She recovered in the usual time without having had a bad symptom, and resumed her ordinary business as a field hand.

Remarks.—This is the only case of prolapsed bladder which I have met with in a practice of twelve years. Ramsbotham, in his late work on obstetrics, mentions it as a cause of lingering labor, and condemns tapping the bladder in such cases; but it was impossible to have done otherwise in the present case, and the result proved it was judicious. I cannot conceive why the bladder should not be tapped when prolapsed in labor, as well as in cases of retention from stricture in the urethra, stone in the bladder, or enlarged prostate in the male. It seems that the risk would be much less, but, I readily admit, that if the catheter can be used, it should by all means be preferred, and all operations to be avoided if possible.

Retention of the Placenta.

In volume iv. page 177, of the New Orleans Medical Journal, will be found an article, by Dr. E. D. Fenner, upon this subject. Since reading that article, I have had two such cases to occur in my practice. The first was that of a lady with her ninth child. She had given birth to four living children, and had had four abortions. In the present case, she was about six months gone, and after unusual exertions and fatigue upon her part, in arranging her house for the summer, she was taken with pain in

the lumbar region, which was followed by a slight hemorrhage. Thinking but little about it, she continued to pursue her ordinary business for nearly a fortnight, during which time there was more or less hemorrhage, until her strength became very much enfeebled, and she took her bed. I was then consulted about the case, and gave as my opinion that the foetus must be in a decaying state, and that the sooner she lost it the better. The pains and flooding both continued to increase; an anodyne of morphia, with a mustard plaster to the back, was directed. This procured a good night's rest, and on the next morning having a call to pass her urine, and while in the attempt to do so, she was seized with pain, and immediately passed a decayed foetus into the night glass, separating itself at the same time from the placenta, the funis being in a sphacelated state. Being sent for immediately, I was in the house in half an hour after it happened; found her free from pain, no hemorrhage, but very uneasy about the after birth. On making an examination, per vaginam, I found the mouth of the womb nearly closed, so much so, that it was with difficulty that I could introduce my finger; to extract it I found was impossible. At her solicitation, I administered thirty grains of ergot, but previous to doing so, I told her and her husband that it was my conviction that it would do her no good, and might be of some injury; but she said that she had taken it before with advantage, and having such a horror of the after birth being retained, she was willing to submit to any means, within reason, to get rid of it. Accordingly the ergot was administered, and was followed by vomiting and great prostration. Brandy, warmth to the extremities, and sinapisms to the stomach were all used, yet no uterine pains followed. I then gave her a full anodyne, and explained to her the situation of the case, and related to her similar ones. By this means her fears became quieted, and she rested well during the day and all that night. On the next morning a dose of castor oil was administered, which operated well, but no placenta followed. A putrid and very offensive discharge from the vagina had now began, for which a diluted solution of chloride of soda was used by injection. This state of things continued for eleven days. During this time she had but very little hemorrhage or pain, and no fever. A dose of morphia, and an occasional dose of oil were administered. At

the expiration of this time, she discharged the placenta in a semi-putrid condition. From then she began to recover, and mended rapidly, and since has given birth to two living children.

The second case I did not see until the third day after her confinement. She was at that time suffering a good deal of pain, with more or less hemorrhage. On making an examination, per vaginam, I found that I could not succeed in introducing my hand or finger into the womb, she having become so very sore from the repeated manipulations of the midwife. A dose of laudanum was directed, and in the course of the day a dose of oil. The oil operated very well, and a goodly number of large clots accompanied the operation, and the patient and her attendants thought that she had wasted the placenta, and so informed me on my next visit; but on further inquiry, and another examination, I found that she was mistaken. The usual course, as was in the other case, was enjoined and pursued. After the seventh day, in the afternoon, having taken a dose of oil and spts. turpentine, the placenta came away without any pain, and she recovered in a short time, without ever having had fever or a bad symptom.

Rupture of the Uterus.

This case was a colored woman, who was in labor with her twelfth child. All of her previous labors, with the exception of the eleventh, were natural, and attended with no difficulty; but with the eleventh, she suffered very much, and came near dying. In the present labor a very intelligent mid-wife was called in. Labor continued active for three days, during which time she was bled and purged by oil. On the night of the third day the pains became very violent; she suffered from sick stomach, and, after a violent paroxysm of pain, she immediately expressed herself as though the child had moved, and that she was perfectly easy. The mid-wife having exhausted all her means, as she said, to bring on the labor again, and failing, she requested that a physician might be sent for. It was sixteen miles distant from town, and the pains having ceased on Sunday night, it was Monday afternoon before they made application for assistance. I was sent for, but could not go. It being a busy time with the physicians, they were unable to obtain the personal ser-

vices of a single one. On applying to Dr. I. J. Haywood, the oldest and most experienced physician in the city, and representing the situation of the case, the Doctor told them that he would send some ergot, but if it failed to produce pain, that they must let him know it. The ergot was administered, and without the desired effect. The messenger returned again that night, and reported the result. Dr. Haywood was unable to go to see the patient, as he had told them in the first instance, but feeling that natural desire to mitigate human suffering whenever in his power, sent for his brother, Dr. E. Bush Haywood, who had just graduated and returned home from Philadelphia, and requested that he would go and see her. Though late at night, dark, and a long distance over a bad road, the Doctor without hesitation obeyed the summons promptly.

On arriving at the place, Tuesday morning about day, he found the woman free from pain, but very much swollen. Upon examination, per vaginam, he was unable to reach the mouth of the womb, but after some exploration he did so, and was unable to discriminate what was the real situation or position of the foetus. He gave her more ergot without producing any pain, and then gave as his opinion that nothing could be done that would save the woman's life; that she was in a sinking condition, and then left for the city, having remained until Tuesday afternoon. The Doctor, feeling a deep solicitude for the case, applied to me to accompany him to see the patient, as his brother's business was such that he could not spare the time. I did so with pleasure on Wednesday morning. Finding, on our arrival, that she had died the previous night, a request was made of her master to let us make a post-mortem examination. He consented, whereupon we proceeded to make it. The weather was very warm, and mortification having taken place, it was with great difficulty that we could accomplish our undertaking. The body was very much swollen, tympanitic, and, on introducing the scalpel into the abdomen, a stream of offensive gas issued, so putrid as to force us from the room for a short time. Having no chlorine, we oiled our hands, and by the burning of tar, we prosecuted and executed our task. On making an incision from the scrobiculus cordis down the linea alba to the pubis, and then a conical one across the middle of the abdomen, we

were enabled to present at once a full view of the whole situation. The child was found very much compressed, and in a state of decomposition, cross-wise its mother, out of the womb, with its face in the right iliac fossa, and its breach resting in the left; presenting its sternum to the vaginal orifice. The womb having been located in the abdominal side, from its fundus to its mouth, and found lying behind the foetus, resting upon the sacrum. Owing to the gangrenous condition in which we found everything, we were compelled to suspend our observations. The result of the observation gave to the owner of the woman the satisfaction that all hopes for her relief were beyond the skill of any man at the time he sought assistance from the profession, and complimented my young friend, Dr. E. B. Haywood, for his prompt and discriminating judgment, besides thanking him for his kind attention.

Empyema.

This case I did not attend in its incipient stage, but was called in some two months afterwards. I found it to be a boy of twelve years of age, badly grown, and had been very much exposed to the winter's weather, as it was in the month of March that I first saw him. He was at that time suffering with acute pain in the right side, extending from the ninth rib up to the fourth: Fever, cough, no expectoration, and was unable to lie down, but had to set in a semi-recumbent position, inclining laterally to the right. Previous to my seeing him, he had been bled, blistered and salivated. His respiration was quick, pulse 120, thirsty, and at night delirious. Percussion flat on the whole of the anterior portion of right side, but on the posterior, resonant. Respiration inaudible anteriorly, but audible and somewhat tubular posteriorly. The left lung appeared to labor much more than was natural. On inspecting the thorax, the right side was rather larger than the left; and on measuring, was some two inches larger, the anterior protruding under the nipple. This part of it appeared as if it was glazed, and rather pulpy or doughy to the touch, but gave no indication of fluctuation. Ordered an anodyne at night, poultice to the side, nourishment, flax-seed lemonade as a drink. With this treatment, and regulating the bowels by injections, the abscess pointed between the sixth and seventh ribs,

in about ten days. An incision was made at this point with a small trocar having the canula within, and a large quantity of thick pus was discharged. A continuation of the poultices ; with quinine, and muriated tincture of iron, full diet and some porter, he recovered perfectly in the course of two months.

Case the second occurred in a negro man, aged 26, eight miles from the city. His master gave me the following history of his case. The negro had, as they supposed, an attack of pleurisy, for which he had been bled, puked, purged and blistered, and they thought then they must have cured him, but yet he continued to fall off. Though he ate very heartily, he complained of its giving him pain, and when he was first taken sick, three months previous, that he was as black a negro as is usually found, and now he was almost a mulatto. He suffered from rheumatism in early life, and then had a stiff knee from it. On inspecting the chest, I found nothing very remarkable as to the general appearance, but on percussing it, the left inferior portion was flat and painful anteriorly, but resonant in the upper two-thirds. By making pressure under the false ribs, in the hypochondriac region, it produced cough and gave him pain. I pronounced it an Empyema, and explained his situation to his master, but he thought that it could not be so, and intimated that he must be feigning his sickness, or, as the negro had it, that he was *tricked*, a very common impression among the negro population, and I am sorry to state, that it is one that is a good deal believed by some of the whites also. In about two weeks the negro began to break out in sores all over him. He had an inordinate appetite, but would refrain from eating as long as he could, because whenever he did eat, it gave him so much pain that he could only get ease by laying on his back, with his heels upwards against the house or fence, and made so much noise as to disturb the rest of the family. After the breaking out commenced, he had a difficulty in passing his urine, and his master was then convinced that he had a venereal disease, which the negro protested was not so : and he sent him off into an out house away from the rest of the family, as if some polluted plague had infested his plantation. He sent for me and communicated his convictions. I made an examination, and assured his master that he had no venereal disease, and that the breaking out was caused by the absorption of the matter

which was taken into the circulation, as well as the reason for his turning yellow. On examining his chest, I found an enlargement of the left side, but he was so emaciated, hectic, with night sweats, that I advised a palliative course, and stated that in a few days more they would not be disturbed by the negro, and requested that they would let me know when he died, so that I might make a post-mortem. Three days afterwards I was notified of his death. On arriving at the place, a large number of the neighbors had collected to witness the examination. The sternum was removed in the usual manner in making an examination of the chest, when a large quantity of putrid matter made its escape from the left side, so offensive that I could not continue my observations much further. The lung was compressed, and the pleura very much thickened.

Having satisfied myself and the owner, of the correctness of my opinion in the case, I proceeded no further with the examination. What is only remarkable in this case was the gradual fading of the dark color, and that he should have become yellow, as well as the breaking out with sores. The over distension from eating was evidently the cause of pain from that source.

Dr. S. P. Hullihen's New Method of Filling Teeth over exposed Nerves. Communicated by E. B. GARDETTE, M. D.

Among the serious difficulties that have belonged to surgical operations for the preservation of the teeth, is that of successfully filling cavities formed by disease, after they have penetrated to the internal or natural cavity, and exposed the nerve.

Various expedients have been resorted to at different periods in the history and progress of the profession, to overcome this difficulty—such as, capping the nerve with a metallic plate, destroying it by means of the actual cautery, or by the application of caustics, and the entire extirpation of the nerve to the extremity of the fang. Each and all of these plans have had their trial and preference with more or less success in different hands, and oftener in very *indifferent* ones; but no candid and intelligent operator, I think, has regarded any of these modes of proceeding *unobjectionable*, whether viewed in reference to the results and advantages of the operation to the patient, or

the surgical principles involved, and which the true surgeon should never lose sight of in his efforts to overcome disease.

I therefore propose to describe briefly the operation of Dr. Hullihen, of Wheeling, Va., or, in other words, his mode of treating a tooth, where the decay has reached the nerve—a mode which has proved most singularly successful in his own able hands for a number of years past, and one that, having myself fully tested for more than a year, I now adopt in my own practice in all cases where the condition of a tooth renders it proper.

After the removal of the diseased parts from a tooth has been accomplished, making it apparent that the nerve is exposed, the operator will proceed to perforate the fang into its natural or nerve-cavity, through the gum and outer plate of the alveolar process; the perforation to commence about a line or a line and a half from the free edge of the gum, and to be in size that of a small knitting-needle. The opening should be made with a view of doing no other violence to the nerve than that of opening its blood-vessels, which may be at once known by the flow of arterial blood. The cavity in the tooth, formed by decay, may then be immediately filled, without the least fear of pain or ill consequences of any kind arising from the pressure of the plug upon the nerve.

The physiological change effected by this operation upon the nerve, may not as yet, perhaps, be satisfactorily explained. That the operation prevents subsequent pain and inflammation in the nerve, and therefore preserves the vitality and color of the tooth, under circumstances which no other known course of treatment can effect, all experience thus far proves perfectly conclusive; and upon this simple fact the merits of the operation are now urged, and laid before the medical profession.

This original mode of treating an exposed nerve, has, with the consent of Dr. Hullihen, been communicated to the "American Society of Dental Surgeons," at their recent annual meeting at Newport, R. I., by Dr. C. O. Cone, Dentist, of Baltimore; but never having myself been a member of that Society, I trust it is in no self-conceit of the comparative importance of my professional opinions that I now perform this agreeable act of personal friendship through a medical journal.

With the characteristic modesty of genius, Dr. Hullihen would, I well know, forbid any attempt to express my sense of the benefits he has conferred upon the profession and those who need its relief; and yet as one of those who appreciate the difficulties belonging to the class of operations under consideration, I must regard the discovery of Dr. Hullihen as among the most valuable improvements in dental surgery.

BIBLIOGRAPHICAL NOTICES.

Lectures on the Principles and Practice of Surgery. By BRANSBY B. COOPER, F. R. S., Senior Surgeon to Guy's Hospital, &c. Philadelphia: Blanchard & Lea, 1852. 8vo. pp. 771, including Index.

The Principles and Practice of Surgery. Illustrated by three hundred and sixteen engravings on wood. By WILLIAM PIRRIE, F. R. S. E., Regius Professor of Surgery in the Marischal College and University of Aberdeen, Surgeon to the Royal Infirmary, &c. &c. Edited with Additions by John Neill, M. D., Surgeon to the Pennsylvania Hospital, Demonstrator of Anatomy in the University of Pennsylvania, &c. Philadelphia: Blanchard & Lea, 1852. 8vo. pp. 784, including Index.

The first of the two works above presented has been some time awaiting notice on our table. At any other than the dog-day season, it would certainly have met with the immediate attention which the offspring of such high parentage demands. As it was, however, the labor of delving through seventy-five voluminous and desultory lectures, comprising nearly eight hundred pages of surgical wisdom and experience, was more than our energies were equal to until the recent arrival of a younger and less formidable applicant, in the second work announced, has roused us to the task.

Mr. Cooper's "Lectures" cannot be new to many of our

readers, since they were originally published in the London Lancet shortly after their delivery to the lecturer's hospital pupils, and thus circulated widely in this country. They require, therefore, a less particular examination at this time than we might otherwise feel bound to give them. Our author informs us that he has spared no pains in the preparation of his work, and that a considerable addition has been made to it in its present form. His object was "to furnish a useful compendium of surgery, in which the student may meet with a clear account of the practice of that science, established not only on my own experience, but likewise upon the best acknowledged authorities." He previously tells us that "it is not without mature consideration that I have determined upon publishing the present volume; but I have come to the conclusion that as its contents are of a practical character, embodying the experience of twenty-five years, during which I have occupied the position of surgeon to Guy's Hospital, it would be found useful not only to the student, but also to those who have entered upon the practice of their profession." Notwithstanding these claims, however, he wishes it to be "borne in mind that it has not been my intention to write a systematic work on the elements of the science of surgery."

Nevertheless, with every due allowance, and putting "the elements of the science" and "the abstract principles of the science," as he phrases it in another place, altogether out of the question, it must be said that his "practical book" makes but a very sorry figure as the result of a quarter of a century's opportunities as a surgeon and clinical teacher in the wards of Guy's Hospital, to say nothing of the many other invaluable advantages of the author as a military surgeon in at least one Peninsular campaign, and as the nephew and associate and successor in practice and teaching of Sir Astley Cooper. We do not pretend to say that there is not a great deal of interesting and instructive reading in these lectures—much that may be noted and acted on with profit by the practitioner and teacher, even more than by the student—much, too, that may not be found so strikingly or usefully exhibited in other works; still the apprehension with which recent experience has inclined us to regard these "practical books," is not lessened

by the advent of Mr. Bransby Cooper's publication. Supposing it to comprehend to a sufficient extent "the general principles of science upon which the practice is based," as he proposes, and admitting it to be the useful compendium of surgery intended, it is yet very far from being the clear and comprehensive account of the practice itself which we have a right to look for from such a source, or which the student ought alone to have. The rambling, diffuse and contradictory style of many portions of these lectures, and the strangely loose and inaccurate assertions frequently occurring in them, have become so well known and so generally commented on, that we feel less obliged to quote examples in this place. We may refer, however, to the lectures (6 and 7) on Hydrophobia and Tetanus. He says, "Of all the diseases to which the human system is liable, there seems to me none so appalling as that produced by the bite of a mad dog." Now, in the very next lecture he contradicts himself, and makes a most extravagant assertion, in the following language: "The disease which forms the subject of this chapter is as appalling as that which occupied our attention in the last lecture, and unfortunately as incurable(!)—I allude to Tetanus." Hydrophobia is stated in his previous lecture to be beyond "any rational hope of cure," (p. 80;) and although he professes to consider tetanus no less incurable, yet in the course of his lecture on the subject, he tells us that he had an opportunity of witnessing symptoms of tetanus resulting from the injection of a hydrocele, in which recovery took place under the use of large doses of calomel and opium, with turpentine enemata, (p. 84.) On the next page we read that "cases are recorded which have been successfully treated by the complete division of a wounded nerve, and by the removal of splinters of wood;" while a little further on, in remarking on a case which he reports in full, he says: "Notwithstanding the fatal result of this case, there seems just reason to consider that the tetanic symptoms were at once put a stop to by the removal of the source of irritation; it is clear that the patient fell a victim to phlebitis." Again, in lecture 46, on Amputations (p. 683,) he observes: "Baron Larrey, during the war in Egypt, amputated in several cases after symptoms of tetanus had commenced, and this practice was attended with sufficient success to

induce him to recommend it." Having thus established—meagerly, indeed, and very oddly, for a man of his authority—the fact which no well-informed surgeon would deliberately deny, the curability of tetanus, he, in the face of his own implied precept, concludes his chapter, as he began it, to the following effect: "Surgery, I fear, has done as little for the cure of this disease as physic, although there are recorded cases of persons having recovered when the amputation of limbs has been performed after tetanic symptoms had commenced, and where they had yielded upon the division of wounded nerves; but still, these operations have so frequently failed, that had a true statistical account been kept, I suspect but little more could be said for surgical than for medical treatment, when once the disease is developed in an acute form. So little light has as yet been thrown upon the true nature of the disease, that the medical practitioner is without the least guide to direct him in his practice. Tetanus, like hydrophobia, has hitherto defied the efforts of the physician," &c. &c.

A glance over the lecture on gun-shot wounds, which follows that on tetanus, affords us another sample of our author's style of teaching. The following will give some idea of his mode of jumping to a conclusion. "Any violent concentrated force may produce the same results as a gun-shot wound, and therefore all extreme contusions from machinery and railroad accidents offer precisely similar pathological considerations. Monographs on gun-shot wounds, or, indeed, on any subject, are therefore somewhat dangerous, as they lead pupils, more especially, to consider the subject as separated from the general principles of surgery." Now we will not stop to quarrel with his vague and sweeping mode of expressing the analogy between injuries arising from fire-arms and "all extreme contusions from machinery and rail-road accidents," but we must beg leave to demur entirely to the plea in condemnation of monographs, as "dangerous," because forsooth the thoughtless student may misunderstand their objects and the meaning of their titles.

This chapter on gun-shot wounds contains among other contradictions, one which, although unimportant in itself and doubtless an inadvertence, is so very marked as to have attracted general attention. Whether an accident or not, it is worth noting as a portion

of the evidence against the general accuracy of the book, and of its consequent unfitness for the student to whom it is especially addressed. A volume of lectures emanating from such an influential source and supposed to be revised with the greatest care, after having been first rehearsed in the lecture room and subsequently reported for the press and published in a medical periodical, must be expected to be especially reliable and free from errors, small as well as great, or to be held correspondingly accountable. We require from the veteran what we could not hope for from the beginner; and no one should complain if the short-comings of the former be visited with the utmost rigor of the law.

To return to our subject proper, on page 96 it is stated that "the wound made by the entrance of the ball is small, and its lips are inverted, discolored and valvular, while the opening through which the ball has made its escape is much larger, with an everted and ragged edge." This is the old-fashioned account, and a true enough one too in many cases. Now for the later story, which is here announced without the slightest allusion to the dictum previously given. "Many different statements have been made respecting the appearance and comparative size of the openings made at the entrance and exit of the bullet. It has been said that the hole by which it enters is smaller and cleaner than that by which it leaves the body, which is ragged and more gaping. This does not, however, seem to be correct; the opening by which the ball enters appears to be generally somewhat the larger of the two. But, in fact, there is so little difference between them that unless the direction of the shot were previously known, it would be impossible to say by which opening the ball entered, or by which it left the body."

It is to be presumed that those who swear by Mr. Bransby Cooper must split this "little difference" for themselves, until further orders—they might as well toss up for it like school boys, so far as his directions are concerned. And thus it is to a greater or less extent throughout the volume. The valuable matter, of which of course there is in various shapes a really large amount, might be compressed with advantage to the whole book into two-thirds if not one half of the present unmanageable bulk of the latter; while in spite of the author's second thought, adverse to "the assistance of wood-cuts," we think a few effective diagrams

and other illustrations properly distributed would have increased the usefulness quite as much as the attractiveness of a crowded and tedious mass of letter press that has nothing now to break in upon its monotony or lighten up its dulness. We do not consider ourselves bound to pursue this examination further, and will take leave of Mr. Cooper with a quotation of which no one need complain. We have taken it at random as an illustration of one of the good points in the book—the caution of the careful and experienced surgeon. Obviously wise and proper as the precept here presented is, it is yet too often shamefully neglected, not only in actual practice but in the books themselves.

“After what has been said as to the tendency to erysipelas following wounds of the scalp and skin of the face, let me urge the necessity of caution in undertaking even trivial operations on these regions of the body, without first having duly prepared the patient for the effects they invariably produce in the system. In some cases the surgeon may be requested to remove small encysted tumors from the scalp—an operation so trivial that it may be executed by a mere tyro in the profession; but even the most experienced and skilful surgeon may risk the life of a patient, and his own reputation, by want of a little precaution.”

“Never, I say, should such a task be undertaken without the actual state of the patient’s health being first well ascertained, as to the absence of any organic disease, the condition of the bowels, state of the urine, and natural performance of the functions essential to a healthy state of the body.” After detailing three different cases in illustration of the importance of the principle, he goes on to say, “such cases as these show the necessity for doing everything which the science of surgery can command to place our patient in the greatest state of security, before we subject him to any surgical operation, and even then never to promise that any operation, however simple, will be perfectly free from danger; for depend upon it, it is as unwise to treat slightly the most trifling incisions of the skin, as it is dishonest to attach to an operation more importance than it fully deserves.”

Mr. Pirrie’s work is one of much more moderate pretensions than Mr. Cooper’s, and yet is, in our view, not only a vastly superior book of its kind, but one that is better altogether, and likely to be much more useful as well as more popular.

It is not offered as a "compendium of surgery," but simply as a compendium of its author's lectures, published in compliance with the long expressed wish of his pupils to be furnished with such a guide. It is not especially addressed to any class of readers, or placed in competition with any of its kind. And yet with a very little extension and other alteration it might be so admirably fitted for the purposes of a text-book, as to outstrip in popularity any competition that could be brought against it at the present time.

His endeavor in the preparation of his volume was "to combine simplicity of arrangement and conciseness and clearness of description with the elucidation of sound principles and practice." An examination of the different chapters will convince any one that, as far as he has gone, he has been remarkably successful in the execution of his task. We say, as far as he has gone; for unfortunately several important topics are not treated of at all, while perhaps as many more are hurried over or barely mentioned. Some of the articles, at the same time, are occupied with subjects which are evidently such favorites with the author as to have received an undue share of his attention at the expense of others. In this way some portions of his book have been so thoroughly worked up, and in themselves exhibit such excellent specimens of effective condensation, whilst they convey the very latest information in connection with their subjects, that we decidedly regret that our author's modesty has so limited his plan. It is only necessary for him to develop his discussion of many topics to a more proportionate length and fulness, and to introduce others which have not yet found a place, in order to make his book the very best of its kind in the English language.

The defects of Mr. Pirrie's volume affect rather its completeness and uniformity as a general work on Surgery than its value to the student as a most companionable guide book in his study of the topics to which the several chapters are devoted.

These chapters are twenty-five in number, each being distinct in itself, and occupied with some particular disease or injury, or class of diseases. They may be briefly enumerated with their titles in the following order: 1, Inflammation and its Results, a comparatively meager chapter, especially in its account of the treat-

ment and of the Results, and yet well brought up and furnished with the most recent views. 2, Erythema and Erysipelas, also a meagre chapter. 3, Wounds, rather more full, but still not as full as we think it ought to be—except in the section on gun-wounds, which is excellent. 4, Burns, in all respects a capital chapter. We would be glad, were there room here, to quote a portion of this article, by which we might afford some idea of the author's best style, both of matter and language. This chapter is extended to twenty-one pages, while that on wounds is compressed into thirty-one; and chapter fifth, on fractures, has but seventy-five. The last named chapter is deficient, not only in its discussion of certain fractures, but in its omission of others altogether. Dislocations come next in order, and take their place a little more at length than fractures. Succeeding them we have affections of the Osseous system, a capital chapter; Diseases of the Joints, also admirable; Curvatures of the Spine, an instructive and beautifully illustrated chapter; Talipes, also good; Affections of the Arteries and Brain, one of the very best chapters; Hernia, not inferior in any respect to the last; Wounds of the Abdomen; Calculous disorders, a full and attractive chapter; Affections of the Testicle, rather defective; Affections of the Genito-urinary Organs, still more incomplete; Amputations and Resections, very full in most respects, but no mention of the circular method of amputation; Deligation of Arteries, full and richly illustrated; Affections of the Rectum, rather incomplete; Affections of the Eye and its appendages, a very good summary; Affections of the Nose, not very full; Affections of the Mouth, Throat and Windpipe, not more satisfactory; Tumors, full, well arranged and well illustrated; and lastly, a rather brief chapter on Affections of the Breast. With this hasty comparative review of its contents, and with a solitary extract, we regret to be obliged to leave Mr. Pirrie's book. We would be very glad to be at liberty to discuss many matters of interest in different portions of the volume, and to dwell especially on several of the chapters which we are inclined to regard as models in their way. We must content ourselves, however, with the following quotation, which, although taken pretty much at random, will at least

serve to give some idea of our author's style and powers of lucid condensation :

" *Treatment [of Acute Abscess.]*—To remove general and local causes of excitement and irritation, and to promote the approach of the matter toward the surface, are important indications in the treatment of abscess. The best means of fulfilling these indications, are the strict observance of antiphlogistic regimen, perfect rest of the affected part, strict maintenance of a proper attitude, the removal of all sources of irritation, as well as of tension, or pressure, and the diligent use of warm emollient poultices, hot fomentations being applied each time the poultice is removed. Purulent matter having once been formed, it may be stated as a general rule in the treatment of acute abscess, that the grand indication then to be fulfilled is the early and free discharge of the matter. In some circumstances very early attention to this rule is of the utmost importance ; as in abscesses under dense aponeuroses, and under thick fasciæ, (as, for example, under the temporal aponeurosis or under the tendon of the occipito-frontalis muscle, or under the fascia of the thigh, of the leg, of the arm, or of the fore-arm, or under the palmar or plantar fasciæ), within tendinous sheaths, as in paronychia tendinosa, or underneath the periosteum, as in paronychia periostei, or under the pericranium, in the proximity of bones, in the natural cavities, or in the texture of bones ; also in abscesses arising from the extravasation of irritating fluids, as collections of matter caused by the extravasation of urine into the cellular tissue of the perineum and scrotum ; abscesses in parts abounding with cellular tissue, when there is great risk of the spreading of the inflammation, or in situations where there is danger of making their way into some of the natural cavities, as into the chest or abdomen, or the joints ; or such as are likely to occasion injury by pressing upon or impeding the functions of important parts, as the trachea, the pharynx, the urethra ; or abscesses, in highly vascular and sensitive parts, where the pain of an abscess is often most excruciating. With scarcely more than one exception, early and free opening of an abscess is the proper course ; but in the above-mentioned conditions, it is peculiarly necessary to adopt this proceeding at the earliest possible period after we are certain of the actual existence of matter ; for not only are time and suffering saved and tissue preserved by its adoption, but by its neglect the danger of most destructive local results is increased, and, in some circumstances, even the loss of life itself may result. Almost the only condition in which it is proper to delay opening, is in cases of glandular enlargement, in which, when other means have failed to produce absorption, and suppuration has occurred, the opening should be deferred, that the pressure of the matter may more effectually secure the disintegration and breaking up of the glandular structure, and thereby favor its removal.

" Of the various methods of opening abscesses I shall refer to only two ; namely, by means of a bistoury, and by means of caustic. The former is preferable, except in two conditions, presently to be men-

tioned. It consists in making a *free, direct* opening in a depending situation, and as already stated, at an early period. In the event of the matter making its way in a different direction, a second opening should be made, which, from often being opposite to the first, is called a counter-opening. By making an early, large, direct opening in a depending situation, and keeping it open while matter continues to be secreted, the formation of sinuses, loss of substances, and disintegration are generally prevented, and the desired result is obtained more speedily, and with less suffering than it would be by any other proceeding.

"The two conditions in which opening by means of caustic is preferable, are the following :

"1. In small abscesses, partaking of a chronic character, where the integuments are attenuated in consequence of the opening having been delayed, or where they are in a diseased state. In such cases, the integuments are too much weakened to take on the necessary action for uniting with the subjacent parts; and as no healing process takes place until they are destroyed by ulceration, it is better to destroy them at once, and make a free opening by means of caustic. For this purpose the potassa fusa is preferred, and is applied so as to destroy the whole of the diseased and thinned integument.

"2. In cases of glandular enlargement in the state of abscess, in which condition the caustic should be used very freely, and be pressed into the gland in different situations, so as to lead to the action by which the diseased structure may be separated and removed." pp. 48, 49.

The additions of the American editor are to the purpose generally, and cannot fail to increase the value of the work, especially to readers in this country. The publishers have done their duty handsomely in the general getting up; and in regard to paper, typography and wood-cuts, have fallen little, if any, short of the original, whilst in the increased amount of text and illustrations, they have really gone beyond it. We cordially recommend their publication as already one of the best text-books on Surgery yet published in the country, and likely to become, in the new edition which must soon be called for, equal if not superior to any now extant.

Transactions of the Medical Society of the State of Pennsylvania at its annual session held in the city of Philadelphia, May 1852. Published by the Society.

The Transactions of the Society for the present year form a very handsome volume of 146 pages, illustrated by three geo-

logical charts, all got up in the best style of printing and engraving. The minutes of the Society we have already given very fully in our pages. In addition, this volume contains the Address of the President, Dr. Innes, and various county and committee reports. The former is sensible and well-written, displaying a high ethical tone, and full of sound practical suggestions. Among other topics, Dr. Innes alludes to the seriously defective organization of the National Medical Association, and points out the evils arising from the admission of the representatives of "coteries formed on the *similia similibus* platform." We confidently trust that this grand defect will be speedily remedied, and we agree with Dr. Innes that it can be done effectually only by confining membership in the Association to "delegates exclusively from State and County Medical Societies."

The reports of the County Societies are of very great interest. Several contain a geological and topographical description of the respective counties; and the Schuylkill, Delaware and Lebanon reports are accompanied by geological charts. These, as the Schuylkill County committee suggest, are "not intended as mere temporary matters, but may be found useful for future reference." It will be remembered that the Berks County Society began this work last year, by submitting a geological chart, with remarks as to the prevalence of certain diseases (particularly dysentery,) upon certain formations more than upon others. The frequent references to this opinion in the reports of the present year, show that the professional mind is awakened to the topic, and an extent and industry of observation aroused which must lead to more reliable conclusions. In the report for 1851, the Berks County Society state that the fatal dysentery that prevailed in 1822 was almost exclusively confined to the slate formation, where it still "prevails from time to time, and occasionally proves exceedingly malignant;" and that this disease, "which is so frequently prevalent on all the other formations, never occurs epidemically on the limestone, and even sporadic cases are unfrequent." At the same time they assert that the general standard of health upon the limestone is inferior to that upon the other formations. In the reports for the present year, we have numerous references to this important

opinion, and facts cited both *pro* and *con*. The Delaware county report states that "after a careful examination and comparison of facts, the committee are impelled to the belief that the diseases of this county during the year have not been in any manner influenced by geological formation," except, of course, the prevalence of miasmatic disease upon the river alluvium. The Lebanon committee assert that "in the gravel district dysentery prevails more frequently than in other parts of the county, and often in the most malignant form." Dr. Henderson, reporting for Mifflin county, says that the opinion of the Berks county committee is not borne out by his experience, many cases of dysentery occurring "upon the lime rock and among those who use the hard water issuing from it." Dr. Confer, writing from Logan's Valley, Blair County, "principally limestone soil," mentions a violent epidemic dysentery prevailing there in August of last year. Dr. Ogier, of Chester County, describes an epidemic dysentery, commencing on the slate ridge to the south of the limestone valley, and for some time confined to that region, but afterwards extending over the limestone; and adds, that one-third of his patients resided in the valley and used limestone water alone as drink. Dr. Edge, of the same county, noticed that, although one half of his patients resided upon the limestone formation, only five used limestone water as drink, and there were other morbid causes in these cases. He adds that "on this subject there has always prevailed a sentiment in this place, which can be traced back to the experience of Drs. Todd, Kersey and Fairlamb, that the limestone water of our valley had a prophylactic effect against dysentery." Dr. Harry, of the same vicinity, states, as the result of twenty years' observation, that "congestive fever prevailed most in the limestone districts and in the valleys, whereas dysentery prevailed mostly on the hills, and he has never known it to prevail as an epidemic in the limestone district." The Bucks County committee state that the epidemic dysentery which afflicted their county in 1838, was "almost exclusively confined to an elevated sandy ridge," and they "have no recollection of any case originating in the limestone valley immediately adjacent." They admit, however, that this conflicts with the experience of their medical brethren of Montgomery County, in reference to a "dysentery which pre-

vailed in the limestone valley of Plymouth and Whitemarsh in the year 1849." The Berks County committee reiterate the opinion expressed in their last report. They give at length the report of Dr. Bertolet of Oley, upon the dysentery of his neighborhood in the summer of 1851. Dr. B. says that "the districts where dysentery was most common were either of the slate or gravel formations, or slate underlaid with limestone; some few sporadic cases were found in the limestone region, but these could almost invariably be traced to exposure on the gravel."

It will thus be seen that the facts cited are somewhat contradictory, while the weight of evidence seems to be in favor of the comparative immunity of limestone regions from this fatal disease, so prevalent of late years. Another interesting fact appears also—that the disease is generally confined to hot and dry seasons, when the streams are low and many springs and wells nearly dried up. The water from such sources will then contain, as the Lebanon committee suggest, an inordinate proportion of saline matter in solution, and may thus become irritating to the bowels. In some cases, it appears that families drinking water from deep wells, have invariably escaped, while those obtaining their water from open springs, especially with a northern exposure and inadequately shaded, have suffered severely. Another point, which we think has not yet attracted sufficient notice, is the distinction to be drawn between proper epidemic dysentery, such as has devastated whole regions of our State, and that which occasionally prevails in miasmatic districts simultaneously or alternately with fever. Dr. Parrish, of Chester County, describes in the present volume (p. 71,) a dysentery evidently of the latter character. We presume that Dr. Gaston means the same thing when he speaks of the dysentery of his neighborhood as obviously "of septic origin." The same *may* be true of the dysentery of Montgomery County, which, commencing in a peculiarly miasmatic region on the Schuylkill, extended up the limestone valley of Plymouth and Whitemarsh. It is desirable, in future reports, that we should have a statement not only of the topographical relation of the disease to geological structure, but also a notice of any local or particular

cause which might operate a deviation from the general law in the case.

The disease which, next to dysentery, appears to have occupied the attention of our country brethren during 1851, is Scarlatina, in regard to which we have several interesting observations and suggestions. The current of opinion in this, as in typhoid fever, sets strongly against any heroic or perturbing treatment. The subordinate importance of intermittent and remittent fevers in these reports, is striking. The case would have been very different twenty years ago. It is true that the counties bordering on the Susquehanna are scarcely represented at all; but we have reports covering the whole valley of the Schuylkill and most of its tributaries to the source. The Lebanon County committee state expressly that "the malarial fevers are rapidly disappearing as the improvements of the country advance."

On the whole, we consider this publication as highly honorable to the Society from which it emanates. We sincerely trust that its next meeting may be still more numerous, and that all the other counties in the State will be roused to action and co-operation.

Sketches of Brazil, including new views on Tropical and European Fever, with remarks on premature decay of the system, incident to Europeans on their return from hot climates. By ROBERT DUNDAS, M. D., Physician to the Northern Hospital, Liverpool, &c. &c. 12mo. pp. 449. London: John Churchill, 1852.

This volume is offered to the profession as the fruit of the observation and experience of a long medical career, passed in various tropical countries throughout the world. The author, Dr. Dundas, was attached to the British army in the Peninsula, West Indies, and coast of Africa, and was for twenty-three years medical superintendent of the British hospital at Bahia, in Brazil. His opportunities, therefore, on the important topic of which he treats, have been ample; and, while we must express our dissent from his opinions as to "the essential identity of fever in all countries," we most cordially bear testimony to

the interesting and able manner in which he has discussed the subject, as well as to the soundness of his views on the therapeutics of malarious fevers generally.

Dr. Dundas has adopted the lecture form of publication—his book professing to be “a series of lectures delivered at the Northern Hospital, (at Liverpool,) in the beginning of the present year.” We have frequently expressed our distaste for the rambling and discursive style of writing for which this lecture form is usually an apology; and we must say that it appears particularly inappropriate in a controversial book like the one before us.

The two first lectures of the course are devoted to the causes and treatment of what the author terms the “break up” of health, so prevalent in Europeans, upon return from a protracted residence in tropical climates. Much of this he attributes to the comparative suspension of the function of the kidneys, which results from the temperature of hot climates; and, probably, with reason. Hepatic derangement, however, we are disposed to consider as the “*fons et origo mali*” here: the point, though, wants, in this country, the practical interest with which it is invested in Great Britain, owing to her numerous tropical colonial dependencies.

The gist of the book is an attempt to establish the unity of idiopathic fevers. The received distinction between periodical and continued fevers is rejected by Dr. Dundas, who maintains that the “law of periodicity or the disposition to remission and exacerbations, at certain intervals, will be *found to apply more or less distinctly to all human diseases*—to those arising in the most opposite conditions of the animal economy, and determined by morbid agents apparently the most dissimilar and opposite in their nature as well as in their results.” From this starting point the author proceeds to detail and examine a variety of facts which came under his notice, in reference to the different forms of fever; whence he reaches the conviction,

“That fever is the expression of a type of disease essentially one and uniform, but admitting of an almost endless variety of forms; the simplest being displayed in the single paroxysm of an ague. It is furthermore obvious,” he says, “on the most cursory observation, that the description of fever as a disease has, in the generality of instances, been drawn for certain localities, and not from the whole group of febrile diseases, as witnessed in different parts of the world. The

typhus fever of Great Britain is superseded by the bilious remittent and intermittent in Southern climates—by the plague in the Levant—and by the yellow fever within the tropics. Each of these maladies, under the special influence of climate, temperament, different modes of living, and numerous other agencies, affects certain peculiarities in its progress; but they are all distinctly impressed by the phenomena universally characteristic of fever as a genus of disease in every clime."

"Acting on the conviction of the essential identity of the remittent and intermittent fever of the tropics, with the typhus fever of Europe, and aware of the specific action of quinine in *every stage* of the former diseases, I have resorted," he says, "to its administration in the ordinary typhus of this country and Great Britain in all its stages, and commonly with the happiest results."

And, indeed, Dr. Dundas appeals to the efficacy of quinine in controlling the typhus fever of Great Britain,—*equal* (he thinks) to its specific influence over the fevers of tropical climates—as a strong argument in favor of his views.

"I would ask," he says, "whether, irrespective of all other evidence, the specific power exercised by proper doses of quinine, over all these several forms of fever, does not afford conclusive proof that, in their essential nature, these fevers are identical, and differ only in form and degree."

These opinions are not without partizans in our own country, and certainly may challenge a plausible array of facts in their support. For ourselves, however, we believe that the fevers known as typhus and typhoid, (into the distinction between which we shall not now enter,) and those of a periodical type—intermittent, remittent, congestive, and, we are disposed to add, yellow—are essentially distinct in origin and pathological characters, and should be also distinct in treatment. The few facts, which apparently militate against such a distinction, seem to us readily explicable by supposing the occasional simultaneous development of more than one form of fever. And against the doctrine of *identity*, there is so much to be urged on the score of difference of climate, season, &c., under which the different types of fever occur, (without dwelling upon their well-marked pathognomonic distinctions,) that we cannot for a moment hesitate in rejecting it. As regards Dr. Dundas' *practical* point of identity—the assumed equal

value of quinine in the treatment of typhus and periodical fevers—we should be content to try the question by it alone, “irrespective of all other evidence.” In the United states, at least, we are satisfied that there will be a nearly unanimous denial of the *specific* efficacy of quinine, in controlling or cutting short typhus fevers. As a corroborant and supporter of the system, its great value in such fevers is of course admitted. But we cannot at all concede to it the same specific febrifuge influence over typhus as over intermittent, remittent, &c.

We have already adverted to Dr. Dundas' sound therapeutic views as to the *early* administration of large doses of quinine, in the treatment of periodical fevers. His book contains also interesting particulars on the medical topography of Bahia, including a notice of the incurable elephantiasis which prevails there.

A Treatise on the Practice of Medicine. By GEORGE B. WOOD, M. D., Professor of the Theory and Practice of Medicine in the University of Pennsylvania, &c. &c. Third Edition, 2 vols. Philadelphia: Lippincott, Grambo & Co., 1852. Svo. pp. 847 and 853, including index.

We regret that, owing to a derangement of editorial plans, a notice of this last edition of Dr. Wood's standard work has not appeared before, and our apologies for the delay are due to the author and our readers. In common with all who take an interest in American medical literature, we have felt the greatest satisfaction in the appearance of these rapidly succeeding editions of this excellent book—affording as they do, the gratifying evidence that it has taken the hold which it deserves upon the profession of our country, and is received as the national textbook upon the Practice of Medicine.

Previous notices of the earlier editions of this work, render superfluous any extended analysis of the edition just issued—“the treatise remaining unchanged in all its essential features.” The modifications and alterations necessary to adapt it to the present state of medical knowledge, are, however, numerous. “Among the additions may be mentioned brief notices of several diseases, which, from their rarity or total absence in this coun-

try, or from being yet unknown as distinct affections, were not described in the former editions. Such are the relapsing fevers of Dr. Jenner, the leucocythemia of Professor Bennet, the dengue, and certain cutaneous affections, as trichosis, lupus, and pellagra." Modifications have been introduced on the subjects of inflammation, fatty degeneration, carcinoma, epidemic cholera, phthisis, hemorrhage, Bright's disease, &c. Extended reference has also been made to the important microscopic discoveries of recent times, and their bearing upon pathology.

Dr. Wood's views on the value of *cod liver oil* in the treatment of phthisis have undergone great modifications since the publication of the last edition of his work. Upon so generally interesting a subject we believe that it will be acceptable to our readers that the opinion of such eminent authority should be quoted in extenso :—

"When the last edition of this work was published, the experience of the author had not been favorable to that remedy; but this was simply because he had not persevered with it a sufficient length of time, in the several cases in which it was employed. The oil seldom produces any very observable effect under a period of from three to six weeks; and, despairing of any good result, he had in every instance omitted it too soon. Subsequent experience has convinced him of its inestimable value. For the last three years he has used it in nearly every case of phthisis which has come under his notice either in private or hospital practice, and almost always, when it could be retained on the stomach, with either temporary or lasting benefit. His experience coincides generally with that of the writers who have testified favorably of its effects. In the worst cases, and most advanced stages, it usually improves the condition of the patient, renders him more comfortable, and postpones the fatal issue. Under less desperate circumstances, it often arrests for a time the march of the disease, giving hopes even of ultimate recovery; and, in some few instances, these hopes are justified by the result, so far as time has hitherto enabled us to judge. Given at the first appearance of the symptoms, I have frequently found it to set them aside altogether, and believe that, with the aid of other suitable remedies, it is capable of effecting permanent cures in very many instances. Its observable effects are usually to improve the digestion, to render the patient fatter and stronger, to diminish the frequency of the pulse and to check the sweats at night, to relieve the cough, and, in fine, greatly to ameliorate all the general symptoms. The patient often becomes fleshy, exchanges his paleness for a ruddy or healthy color, and feels himself nearly if not quite well. Unhappily, the physical signs do not generally undergo the same rapid improvement. If there was evidence of considerable solid deposition, this goes on to softening and the formation of a cavity; if

there was a cavity at the commencement of the treatment, this not unfrequently enlarges, while others form; and, after a period of very flattering amendment, perhaps for months, perhaps for a year or more, the symptoms return, and the patient too often sinks at last. Yet it is not always so. Sometimes suspicious physical signs in the early stage entirely disappear, and cavities either remain stationary or heal. The following, so far as I am capable of judging from my own observation, and the recorded experience of others, appears to be the real value of the remedy. It does not act as a specific, and is wholly incapable of producing, by any direct influence of its own, the removal of the deposited tuberculous matter. But it invigorates digestion, improves the character of the blood, and by a peculiar power modifies the nutritive process, so as to obviate, in a greater or less degree, the tendency to the deposition of tuberculous matter. When this tendency is not very strong, and other suitable measures are made to co-operate with the oil, it appears capable of arresting the further formation of tubercles altogether. But the matter deposited must pass through its own destined changes. If small in quantity, as in the earliest stage of the disease, it may undergo the calcareous metamorphosis, and thus cease to do harm. If larger, it must soften and be discharged, leaving a cavity, which may ultimately heal if not increased by further accessions of tubercle. If abundant, it must undergo the same change, and then must necessarily prove fatal, should so much of the lung be destroyed in the process as to render the remainder insufficient to fulfil the purposes of respiration, or should the strength be inadequate to support the exhausting effects of the necessary irritation and suppuration. It is seen, therefore, that cod-liver oil though a very valuable agent, perhaps the most valuable, should be looked on only as one of the means of confirming the general health, and thus affording the best possible protection against the further progress of the malady, and enabling the system to withstand the depressing and exhausting influences necessarily exerted upon it in the elimination of the tuberculous matter. These views are certainly encouraging; and they would seem to be supported by the fact of the recent diminution of the general mortality from phthisis, as evinced by the statistical reports, in the city of Philadelphia, which can be ascribed to no other known cause than the general use of cod-liver oil. But great care must be taken to guard against the error of relying upon this alone, to the neglect of exercise, exposure to pure air, and the various other methods of invigorating the system, already referred to. A tablespoonful of the oil should be given three times a-day, and the remedy persevered in for many months, nay, interruptedly, even for years, should it continue to agree with the patient, and the disease not appear to be sooner eradicated. As the diathesis is often constitutional and inherited, it will be necessary to be always on the watch, even after the disappearance of the symptoms, in order to meet them promptly should they return. As the oil favors the production of a rich blood, it is obvious that, upon the occurrence of hæmoptysis or acute inflammation, it should be suspended until these have been subdued, and then resumed."

A Treatise on Diseases of the Air Passages: comprising an inquiry into the History, Pathology, Causes, and Treatment of those Affections of the Throat called Bronchitis, Chronic Laryngitis, Clergyman's Sore Throat, etc., etc. By HORACE GREEN, A. M., M. D., Professor of the Theory and Practice of Medicine in the New York Medical College, &c. &c. Third edition, revised and enlarged. New York. Geo. P. Putnam. 1852.

A third edition of Dr. Green's work (which has met with much favor, both at home and abroad,) having been called for, the author has carefully revised the previous issues, and added to it two new chapters on spasmodic asthma and œdema of the glottis, in both of which his favorite remedy of topical cauterization has been successfully employed. We confess we are at a loss to understand the *modus operandi* of cauterization of the larynx in the treatment of spasmodic asthma, unless it be by the impression made upon the nervous system of the patient, and at any rate the number of cases reported (only three) is hardly sufficient to justify a conclusion as to its general applicability. It smacks rather too much of hobby-riding, coming from one whose name is so generally associated, in this country, with the method of treatment under notice.

Throughout the whole work we notice additional matter, derived from the author's more extended experience, and calculated to increase its value. The typographical execution and "getting up" of the work are highly creditable to the publishers, who have our thanks for the copy they have kindly sent us.

The Physician's Visiting List, Diary, and Book of Engagements, for 1853. Philadelphia, Lindsay & Blakiston, 25 South Sixth Street.

Our prognostications in relation to this most acceptable offering to the profession, were speedily realized in the sale of the edition of 1852, and it has proved itself to be one of those conveniences which no man will ever be without, when once discovered.

We have received from the publishers a copy of the Visiting

List for 1853. Besides space for recording twenty-five visits per diem, it contains blanks for memoranda, obstetric engagements, residence of nurses, vaccination engagements, list of things lent to patients and others, accounts asked for, memoranda, a table of poisons and their antidotes, a table of doses, proceedings of the American Medical Association, and an excellently arranged almanac, and the whole is conveniently arranged so as to be readily carried in the pocket. From abundant experience we warmly commend it to our readers both in the town and in the country.

THE MEDICAL EXAMINER.

PHILADELPHIA, OCTOBER, 1852.

FOREIGN QUACKERIES AND THE DRUG-INSPECTION LAW.

A recent case has raised the question of the admission of foreign quack medicines under the drug-inspection law, and the decision made by the authorities is not that which appears to us consonant with reason and justice. It is but natural that those whose proceedings it was intended to regulate by the operation of this law, should endeavor in every way to evade its provisions. Not only would they desire to escape the vigilance or overcome the integrity of the Examiner, but they would wish to obtain the implied sanction of his approval for their wares. An article which has passed the Custom House carries with it necessarily the endorsement of a competent Examiner, as one that may "properly, safely and without danger, be used for medicinal purposes." Such are the words of the law, and it is readily seen that such a sanction is worth more to a nostrum-dealer than a certificate from "the Duke of Aldborough," or a half dozen of the reverend gentlemen, who are, with us, the general sponsors of quackery.

The facts of the case are these. A quantity of certain substances labelled as Holloway's Pills and Ointment, was entered at the Custom House of this city, and referred to the drug-examiner for inspection. The duty of that officer, under the law, is to try all drugs by the

standard of the United States, London, Edinburgh, French and German Pharmacopœias, and to refuse to pass all that are adulterated or deteriorated, and "improper, unsafe, or dangerous to be used for medicinal purposes." In the present instance, articles were presented of a compound character, and of the composition of which the Examiner was necessarily ignorant. They were totally unknown to the medical profession. They might contain injurious or even poisonous constituents, not discernible by the most careful examination and analysis. At all events, they were secret nostrums and not drugs or medicines recognized by any codex whatever. Had they been unofficinal simples, vegetable or mineral, the source and character of which were known, or could be readily ascertained, there could be no difficulty about them. But they were vile quackeries and impostures, compounded by a designing person to defraud a gullible public. Could any honorable and conscientious examiner give them the sanction of his endorsement? We say No!—and personally, we would have resigned the office, if the case were ours, rather than affix our name and sanction to the invoice. The Examiner, did what we think was his duty in the premises, and refused to pass the articles, referring the case thereby to his official superiors.

But his judgment has been reversed. The quackeries in question have been admitted, and now are heralded with flaming advertisements in our newspapers. Worst of all, they have been admitted mainly on the authority of an opinion to that effect, signed by five respectable gentlemen of our city, all of whom are in official positions (we believe) in our College of Pharmacy, and one of whom is a graduate and practitioner of medicine! We give this document that there may be no mistake about it. The signatures we omit. The Italics are ours.

"We, the undersigned, are of opinion that the law in reference to adulterated drugs, medicines, and medicinal preparations was not designed to exclude secret medicines of foreign manufacture, provided they were *made by the party, and at the place specified in the label*, and that, therefore, if the Inspector believe that *such preparations are what they purport to be and not spurious*, he is bound to pass them.

"At the same time we would have it expressly understood that our private opinions are decidedly adverse to all secret medicines, whether of foreign or domestic origin, and in giving the above opinion, we do it entirely in justice to our sense of the intended meaning of the law, and not from a desire to favor the introduction of such medicines."

Now there are, to our mind, several curious features in the above document. In the first place, we do not see that any body of apothecaries

caries, however intelligent, are the proper judges of the intention and interpretation of any law. The language of the act of Congress is explicit enough, and may be understood by any one. If there were technical difficulties, they would be better referred to those accustomed to deal with legal enactments of doubtful interpretation. But the principal peculiarity is, that this opinion comes from gentlemen who have hitherto professed a firm hostility to quackery, and are members of an institution which the medical profession has always respected and valued as a public safeguard against its encroachments. Their proviso in the concluding paragraph is all very well, but it is not worth the paper it is written upon to combat the ill effects of its predecessor. It will be seen that the position taken not only authorizes the unlimited introduction of foreign nostrums, but it actually converts the drug-examiner into a guardian of the interests of the manufacturer of the abominations. It virtually makes him say to "Doctor" Holloway:—"You may flood our land with your vile compounds. You may poison our people and extract from them untold sums of gold in return; and no imitation or counterfeit shall interfere with your profits. I stand here, by appointment of the Government of the United States, to protect and keep inviolate the sanctity of your labels and package-marks, and to condemn and forfeit all 'pills and ointment' which do not bear upon them those sacred characters!" Such is the inevitable operation of the position taken, for which we have no doubt that the foreign empiric and his agents here will be duly grateful.

We can comprehend such a position as this: that the nostrums in question are not drugs or medicines within the intent and meaning of the law, and are therefore not subject to inspection by the Drug-Examiner at all. Such is the position which we believe the department must ultimately take, if its officers determine that these nostrums shall continue to come in. It is an insult to the self-respect of any honorable pharmacist or physician to ask him to become the endorser as "safe and proper" of every wretched empiricism that the lust of gain may induce any unprincipled European adventurer to send over here to gull the simple Yankees with. As to the course pursued by the Examiner, we unhesitatingly pronounce it honest, manly, and consistent. That his decision has been reversed is his misfortune, *and ours*. The sting of the business is, that it has been reversed by the action of men with whom we have hitherto been happy to co-operate in the advancement of legitimate medicine and pharmacy.

MINERAL SPRINGS.—NOTICE.—Doctor John Bell (Philadelphia,) who is preparing a work on *Mineral Springs*, more especially on those of the United States, is desirous of procuring, at an early day, all accessible information on the subject. With this view he requests his professional brethren to transmit to him all the facts in their possession which may throw light on the chemical composition and curative powers of the waters of the Springs in their respective neighborhoods.

Proprietors of these waters would oblige by sending to Dr. Bell authenticated accounts on these points, and also of the topography of the Springs, and the roads by which they are approached.

MEDICAL NEWS.

PROGRESS of EPIDEMICS.—The cholera still claims its victims, and is making rapid advance towards our coasts. In Warsaw from fifty to sixty die daily; and on the 6th and 7th instant, it is said, 240 persons died.—At Posen, the mortality is very great, and in Dantzic, where it has also shown itself, four-fifths of those attacked perish in consequence.—Lamentable accounts have been received of the mortality among the inhabitants of the Trans-Vaal territory, Cape of Good Hope, arising from a contagious disease peculiar to the country, which has this season assumed an unusual degree of virulence. Upwards of 300 of the settlers have been cut off in one locality. The disease, it is said, is very rapid in its operation, generally ending in death within a few hours of the attack.—The small-pox continues to prevail in Jamaica; the yellow fever has much abated at Rio de Janeiro, and only a few cases now remain.—The official *Gazette* of Savoy states, that a deep incision in the trunk of the vine, near the root, cures the mangra, the disease which has been so destructive to vineyards this year.—There is a very sad report that the disease, which has ruined the potato crop, has extended to the wheat; its extent at present is undecided.—The drought has been very great all through the United States, and the crops have suffered severely in consequence. Latterly, however, there has been, as in this country, a succession of heavy thunder-storms, but the heat remains as intense as before. The public health throughout the country has suffered. All through the west and south a species of malignant cholera has prevailed extensively, while along the banks of the western rivers the Asiatic cholera, in a less mitigated form, has swept off multitudes of the inhabitants.—*Lond. Med. Times*, Aug. 21, 1852.

OBITUARY.—MR. HERBERT MAYO.—This well known author and surgeon died, a few days since, in Germany. Mr. Mayo was formerly lecturer on anatomy and physiology at King's College, and surgeon to the Middlesex Hospital. Of late years, however, he forsook the legitimate path of his profession, and became a mesmerist and a hydropath, on both which subjects he wrote extensively. His papers in the late *Medical Gazette* on the subject of mesmerism, exceeded all bounds, and many of his friends were fearful, at the time, that his mind had become wrecked. He subsequently embraced hydropathy, and retired to practise this heresy into Germany. Whilst in sound mind Mr. Mayo was undoubtedly an able writer and original thinker, and his lectures on Anatomy and Physiology were remarkable for clearness and beauty of style. His practical abilities as surgeon were great, but certainly physiology was his forte. His work on Physiology, although now superseded by more modern productions, will always be remembered with pleasure by those who read it. Mr. Mayo was somewhat conceited, but withal an amiable man. He was deficient, however, to a remarkable extent, in worldly wisdom; as an instance of which it may be mentioned, that whilst lecturing on Physiology, at King's College, he actually became a candidate for the professorship of the same science at University College, vacant by the resignation of Dr. Jones Quain; and then was astonished to find that the council of King's College did not approve of his conduct.—*London Lancet*, Aug. 28, 1852.

RECORD OF MEDICAL SCIENCE.

OBSTETRICS.

Chloroform in Infantile Convulsions and other Spasmodic Diseases. By Professor SIMPSON, Edinburg.—As the majority of convulsive attacks in infants depend upon sympathetic or functional derangements, and not on structural changes, the first indication is to discover and remove sources of irritation; and the second, to reduce super-irritability of the excito-motory system. In the more chronic cases iron and zinc are used; in the more acute ones, antispasmodics; such as opium, hyoscyamus, and musk.

Case.—The Viscountess — was confined on the 7th of October. On the 17th of the same month, the child was observed by the nurse to have two or three times during the day twitchings in the muscles of the face. On the two following days these increased in frequency and extent; on the 20th, the convulsions became far more violent in their

character, were more prolonged in their duration, and were repeated with much greater frequency. They continued with little change, and no abatement in their intensity or frequency, for the next fourteen days. Sometimes they affected the right side of the body much more severely than the left. In the meantime, Dr. Scott and I tried a great variety of means for their relief, but all in vain. The bowels were well acted upon with mercurials, magnesia, &c.; and every separate function attempted to be brought as near as possible to the standard of health. A new wet nurse was procured, lest the milk might perchance have been proving, as it sometimes does, the source of irritation. The child was placed in a larger and better ventilated room. Ice and iced water were occasionally applied to the scalp. At one time, when the fits became unusually prolonged, and were not only accompanied but followed for a time by much congestion in the vessels of the scalp and face, and an elevated state of the anterior fontanelle, two leeches were applied. Liniments of different kinds were used along the spine. Musk, with alkalis, was given perseveringly for several days as an antispasmodic; and small doses of opium, turpentine enemata, &c., were exhibited with the same view. All these, and other means, however, proved entirely futile.

As I have already stated, it was on the 20th of October that the fits first assumed a severe character, and they continued without any amelioration for about fourteen days from that period, recurring sometimes as frequently as ten or twelve times in an hour. At last the child, who had hitherto maintained wonderfully his strength and power of suction, began to show symptoms of debility and sinking; and during the fifteenth and sixteenth days of the attack, the fits became still more violent, and more distressing in their character. They were now accompanied with moans and screams that were very painful to listen to; symptoms of laryngismus and dyspnoea supervened towards the termination of each fit; and in the intervals the respiration, as well as the pulse, continued much quickened.

During these two last days of the disease, the exhaustion became so great, the dyspnoea in the intervals so distressing, and the fits so very violent and constant (seventeen were counted in one hour,) that Dr. Scott and I gave up all hopes of the possible survival of the infant. We had exhausted all the usual means of relief. Ultimately, but much more with the view of abating the screaming, laryngismus, and other distressing symptoms under which the little patient was suffering, than with any great hope of permanent relief and cure, I placed the child, on the forenoon of the 5th of November, for about an hour under the influence of the inhalation of chloroform. During this hour there was no recurrence of the fits; but in a short time after the withdrawal of the action of the anæsthetic the convulsions recommenced with their old violence and frequency. The benefit, however, was sufficient to encourage a longer repetition of the remedy; and from four to eight o'clock in the afternoon of the same day, my assistant, Mr. Drummond, placed and kept the child again under the influence of chloroform, a few inha-

lations from time to time, of a very small quantity of the drug sprinkled upon a handkerchief, and held before the face of the infant, being sufficient for this purpose. It was specially applied at any threatening of the recurrence of a fit, and during the four hours in question, all convulsions were in this way repressed. When the child was allowed to waken up at eight o'clock, it took the breast greedily, and continued well for upwards of an hour, when the convulsions again began to recur. At last, about 12 p. m., it was again placed under the inhalation of chloroform, and kept more or less perfectly under its action for upwards of twenty-four continuous hours, with the exception of being allowed to awaken eight or ten times during that period for the purpose of suction and nourishment. During most of this period it was carefully watched by Mr. Drummond, and at last the nurse was entrusted with the duty of adding the few drops of chloroform to the handkerchief, and exhibiting them at any time the child was offering to awaken or become restless.

After this long continuation of the chloroform, the child, on being allowed to waken up, as usual drank greedily at the nipple, and immediately fell back into a quiet and apparently natural sleep. The chloroform and all other formal medication was in consequence discontinued; and from this time there was subsequently no recurrence whatever of the convulsions. In about ten days the infant was removed with the family to the country. I have within the last two days (December 18,) seen the child as it was passing through Edinburg. It was strong, plump, and well grown for a child ten weeks, and was, in fact, revelling in the best of health.

In exhibiting the chloroform to this infant, ten ounces of the drug were expended; but of course a very large proportion of this quantity was lost by evaporation, in consequence of the mode in which it was employed.

I have known the inhalation of chloroform similarly useful in other cases in arresting infantile convulsions; but I am not acquainted with any instance in which the patient was so young as in the above instance. In the adult also, especially in cases of puerperal convulsions, I have now repeatedly seen the inhalation of chloroform as signal and satisfactory in its antispasmodic power over the convulsive fits, as it was in the little patient whose case I have described. Tetanus and epilepsy have been temporarily arrested and controlled by it; and perhaps it will yet be found one of our most certain and beneficial therapeutic means in the functional forms of those different convulsive or spasmodic diseases that are produced either by an undue excitability of the true spinal system, or by distant morbid irritations acting through this, the excito-motory system. Such reflex convulsive or spasmodic affections are, as is well known, particularly common in infancy and childhood. I have seen its use arrest laryngismus, colic, hiccup, &c.; and cases have been detailed to me of its occasional successful use in asthma, spasmodic urethral stricture, &c. But there is one common and too fatal spasmodic disease, almost confined to the period of childhood, in

which I have seen anæsthetic inhalations successful in arresting and controlling the paroxysms, and where probably a more extended and persevering use in the employment of them would be found to be attended with beneficial effects. I allude to whooping cough. I have known chloroform inhalations greatly abate the irritability of the cough attendant upon phthisis, &c. But with others I have scrupled to use chloroform inhalations in whooping-cough, under the fear that they might possibly increase the great predisposition which exists in this affection to pneumonic inflammation, or aggravate that inflammation if it were already present. This *a priori* reason, however, against the use of chloroform inhalations as an antispasmodic in whooping-cough has been of late set aside by the observations and experience of different German physicians. In a paper containing some remarks relative to the medical uses of chloroform, published in the *Monthly Journal* for December, 1847, in addition to its employment as an antispasmodic, anodyne, &c., I suggested the possibility of the drug acting as a contrastimulant in some inflammatory diseases, and particularly those of a painful kind. Latterly we have had records published of its employment in upwards of 200 cases of pneumonia in German practice. Out of 193 cases of pneumonia treated with chloroform inhalations by Wachern, Baumgärtner, Helbing, and Schmidt, 9 patients died, or the mortality amounted to $4\frac{1}{2}$ per cent. Dr. Varrentrapp has given chloroform in 23 cases of pneumonia in the Frankfort Hospital. One of these 23 patients died. The detailed results in the other 22 cases seem to have been sufficiently satisfactory. At all events, the effects of the chloroform inhalations upon the cough, expectoration, &c., and upon the general course of the disease, would appear to show that we need have no fears of deleterious effects from it, as far as regarded the chance or existence of pulmonary inflammation; whatever advantages we may derive from it in relation to its prevention of that inflammatory state by allaying the cough, keeping the lungs in a relative state of quietude, and abating or restraining the succession of characteristic spasmodic attacks. I speak of course of the more severe cases of pertussis; for the milder forms of it require care merely rather than actual treatment. —*Braithwaite's Retrospect and Monthly Journal*.

Discussion in the Academy of Medicine of Paris, on Induction of Premature Labor.—A very animated debate has just been concluded in the Academy of Medicine of Paris, regarding induction of Premature Labor, in cases of extreme narrowing of the pelvis and of uncontrollable vomiting. The principal speakers were M. Cazeaux, the reporter of a paper on the subject, and M. P. Dubois. These gentlemen, who both hold an eminent position as obstetricians, disagree thoroughly on the question. M. Dubois advocates induction of premature labor in cases of obstinate vomiting, and rejects it in narrowing of the pelvis; whilst M. Cazeaux holds exactly contrary opinions. The paper which gave rise to the discussion was sent in by M. Lenoir, who requested the learned body to give an opinion on the question. He had, in fact, per-

formed the operation upon a deformed woman, whose first child had been extracted in fragments, and he was anxious that the Academy should give its sanction to the proceeding, which sanction M. Dubois thought his colleagues should withhold.

We cannot enter into all the merits of the discussion, which was very animated and extremely instructive; we may, however, notice, that M. Dubois was proved to have himself advocated induction of premature labor in his lectures, and it was shown that his opinions must have since been materially modified. A feature of importance in the latter gentleman's speech is the relation of seven or eight cases of obstinate vomiting, which were mostly followed by death. In one of these cases induction of premature labor saved the patient and the child. M. Cazeaux showed very forcibly how preferable is induction of premature labor to the Cæsarian section or craniotomy; and the Academy, after a very protracted discussion, at last adopted the following conclusions, which are by far more reserved than those at first proposed by the reporter: "Whereas M. Lenoir was sufficiently warranted in having recourse to induction of premature labor in the case of Julie Gros, by the authority of two cases previously thus treated, and by the consenting voice of several of his professional brethren called in consultation, the Academy thanks the author for his interesting paper, and recommends the latter to the Committee entrusted with the publication of memoirs."—*London Lancet*, Sept. 2, 1852.

PATHOLOGY AND PRACTICE OF MEDICINE.

Case in which Prune Juice and Orange-Coloured Sputa were present without Pneumonia. BY J. WYATT CRANE, M. D., Edinburg, Licentiate of the Royal College of Physicians, &c.—No opinion in our profession has been so long and so universally received as, that the rustiness, or orange color of the sputa is, when present, pathognomonic of the existence of pneumonia. Valleix, one of the most guarded and accurate, as well as the most recent of systematic writers, says, p. 420, vol. 1, 2nd edit.:—"Ces crachats excepté ceux qui sont colorés en vert sont pathognomoniques de la pneumonie. Leur absence, il est vrai, ne prouve pas absolument que cette maladie n'existe pas, mais leur présence en constate l'existence." I have, however, had a case under my care lately, where these colorations of the sputa have been present on several occasions, and in which, I am satisfied, both from the absence of the general and physical symptoms of pneumonia, and from the frequency of the occurrence of the disease, its march, and its duration, that pneumonia did not exist. I trust, therefore, that the case may be considered of sufficient interest to prove my apology for laying it before your readers; and, as I conceive that the cause of the coloration of the sputa must be sought for in a pre-existing state of disease, it will be necessary for me to detail somewhat more minutely than might otherwise be necessary, the state of the patient above a year previously to their occurrence, at which epoch I was consulted, in consequence of his finding that he could not walk a short distance without experiencing a

feeling of distension and oppression at the præcordia, which compelled him to stop suddenly; and, as these symptoms were likewise accompanied by a loss of muscular power in the lower extremities, rendering it impossible for him to proceed, he was obliged to lay hold of the nearest object to prevent himself from falling; he described himself as suffering from no palpitation, inconvenience, or difficulty of progression, until the moment when the seizure occurred, which it did when he had walked about fifty yards, and that in a few minutes, the oppression, &c., disappeared, until their sudden recurrence when he had walked about fifty yards further. His age was eighty-seven; notwithstanding, his bodily and mental powers were but little impaired, and were remarkably vigorous for his time of life; his appetite and digestion were good; he did not complain of palpitation of the heart, or pain anywhere, and when at rest, felt pretty well; the only complaint he made being a slight feeling of tightness at the epigastrium, of insufficient sleep, and occasional noises in the head, with a slight cough and spitting, principally in the morning; his general health had always been perfect. The pulse was 65, small, and intermittent, generally to the extent of about two intermissions in the minute; on percussion, I found the præcordial dulness a little extended, whilst, in all other parts of the chest, the sound was perfectly normal; on auscultation, an occasional mucous rattle was perceptible, the impulse of the heart was not increased, but a double bruit de soufflet, most clear in the region of the heart, and under the right clavicle, was perceptible in all parts of the chest. I inferred, from the above symptoms, the existence of an affection of the valves of the heart, as well as a slight chronic bronchitis, and contented myself with absolutely prohibiting all muscular exertion, or violent emotions; enjoining the patient to take no exercise except in his carriage, and regulating the diet and alvine functions. With these precautions, which he strictly observed, no increase of the symptoms complained of took place, and there was no development of fresh ones, till my attendance was again requested in the middle of the night of the 10th October, 1851, when I found him laboring under the greatest oppression, with a loud wheezing and rattle perceptible at a distance from the bed on which he was lying, but from which he was almost immediately obliged to rise, and sit upright on a chair, in consequence of a sense of impending suffocation. The respiration was exceedingly accelerated and laborious, there was considerable fever, and the pulse was 120. He complained of no pain, but constant cough and copious expectoration of a thin, glairy, and frothy fluid, which in the course of two hours from his first seizure amounted to about a breakfast-cup full; and at this epoch began to assume a rusty color, and to become thicker and more scanty. An attentive examination of the chest detected no other abnormal sounds than the usual bruit de soufflet, almost masked by mucous and sonorous rattles. He had gone to bed perfectly well, and in about two hours afterwards had experienced a difficulty of breathing and accelerated respiration, which he termed "a hurry;" this was succeeded by fever and rapidity of pulse, and this again in a short time by the wheezing and rattling in the chest—by the

cough and frequent expectoration before specified. The symptoms were now at their acme, and the dyspnœa was so urgent, that he repeatedly stated his conviction that, unless he were relieved immediately, he would be suffocated. I prescribed two grains of tart. antim., to be taken in divided doses till vomiting ensued; after which he became so much easier that I was enabled to leave him. On visiting him four hours afterwards, at 10 a. m., in conjunction with a French physician who had been requested to meet me, I found him, to my great surprise, suffering from little dyspnœa, no fever, pulse only 80, with scarcely any cough. The sputa which had been expectorated into another cup were scanty, thick, viscid, and deeply colored, "*jus de pruneaux*," contrasting most remarkably with the contents of their first cup in their quantity, consistency, and color. A minute examination of the chest detected no râle crepitant or dulness on percussion, and nothing abnormal, but a slight and occasional râle muqueux. Heart sounds as usual. The tartrate of antimony was ordered to be continued, and a blister applied. At our visit in the evening, the general symptoms were so much relieved, that but for the effects of the tartrate of antimony, he would have felt himself in his usual state of health. The sputa, however, were still deeply and universally colored "*jus de pruneaux*," and were very viscid. He passed a pretty good night, and the next day, 11th October, felt himself pretty well, pulse 76, skin cool, no dyspnœa, chest sounds as before, sputa still colored, but the quantity diminished. To continue the antimony, which, I should have stated, had not excited vomiting after the first morning. On the 12th there was no change to note, except a diminution in the pulse to 70; sputa as before. On the 13th, 14th, and 15th, the coloration of the sputa, which was the only morbid symptom remaining, gradually diminished, until they became of the character of the usual morning expectoration,—yellowish, white, and translucent; but still so viscid that, on turning the cup upside down, they remained attached to the bottom, and at this period his health was completely restored to its usual state.

On the 20th of November I was again sent for, and found him laboring under an attack of precisely similar character to the previous one, having commenced in the night, in the same manner, and with the same succession in the order of the symptoms, attended, for about two hours, by frequent expectoration of the same copious thin, glairy, frothy fluid, becoming colored, as before, just as it passed into the thicker viscid and deeply-tinged prune-juice sputa; at which period, the dyspnœa fever began to diminish, and continued rapidly to do so, till, in about six hours, the general symptoms had almost completely disappeared; and, in four days more, the sputa had again regained their natural appearance. The treatment was the same as before, except that no blister was applied. The chest-sounds were as before; and no dulness, on percussion, or crepitous rattle, was preceptible at any time. Similar attacks occurred on the 5th December, 15th December, 29th December, 29th January, 13th February, 6th March, and 12th April; a few days after which the patient left Avranches to return to Ireland. They were of a similar

character to the preceding ones, except that the sputa were, in all of them, of an orange color, instead of the dark *jus de pruneaux*, which was only present in the two first; and each successive attack, also was milder than the preceding one, not only with reference to the general symptoms, but also with respect to the coloration of the thick sputa, which gradually became less intense and of shorter duration.

As I have, I fear, already trespassed too much upon your valuable space, I shall only further state, very shortly, that on reflecting upon the peculiarities of the case, I considered that the symptoms were explicable on the supposition that the impediment to the circulation through the lungs, owing to the affection of the valves of the heart, gradually produced distention and obstruction of the capillaries short of the degree which would terminate in pulmonary apoplexy, and that this congestion was relieved by transudation of the serum of the blood; thus accounting for the dyspnœa, etc., and for the first copious thin, frothy expectoration, as well as for the rapid melioration of the oppression and fever, in proportion as the expectoration proceeded; and that the subsequent coloration of the sputa was due to the more gradual mixture of the coloring particles of the blood with the mucus which was expectorated daily in the chronic bronchitis that had existed previously—*London Medical Times*, September 4, 1852.

Microscopic Examination of a Relaxed Uvula. BY T. INMAN, M.D., Lecturer on Materia Medica, Therapeutics, and Medical Jurisprudence, etc. A gentleman, whose father had suffered from a similar affection, was complaining of severe cough for some weeks, apparently arising from relaxation of the uvula.

On examining this appendage during an attempt at deglutition, the upper part was seen to contract firmly, leaving the lower part perfectly smooth and unchanged. It seemed thickened, but its color was normal. I recommended excision, which was at once submitted to, and I procured the fragment for examination. It was very firm, almost fibrous in the interior, and covered with the ordinary mucous membrane, which was not hypertrophied. On making sections of the fibrous part, and tearing them up with needles, the structure was found to consist of groups of large cells, 1-250th inch in diameter, and studded with an immense number of granules. These were probably portions of enlarged and altered mucous glands, and were bound together by strong areolar tissue. Amongst these were interspersed numerous muscular fibres, arranged in bundles. They were 1-750th inch in diameter, but had few of the ordinary characters of voluntary muscle. Very few were striated—all of them seemed to be composed of an outer membrane, and an inner substance closely resembling fibrin. It was homogeneous, yellow, divided irregularly into fragments by transverse divisions. All elasticity seemed to be gone. The majority of the fibres terminated in blunted points, as if they were undergoing absorption.

From this it will be seen that relaxation of the uvula is not (in every case at least) dependent upon muscular debility only, and therefore to be

cured by local stimuli, but that it is sometimes occasioned by an actual change of structure preventing contraction. The part so diseased acts as a constant dead weight, and increases the mischief by dragging down that portion which is still healthy. In this case no other remedy but excision could have been of any use. This simple corollary may be deduced from the microscopic appearances, viz., whenever the lower portion of the uvula is quite motionless during deglutition, it is useless to attempt to cure it, except by removal.—*London Medical Times of September 4, 1852.*

MATERIA MEDICA AND THERAPEUTICS.

Remarks on the Effects of Iodine on the Glandular System, and on the Properties of Koussou. By THOMAS H. SILVESTER, M. D., Clapham.

[Read at the Anniversary Meeting of the South-Eastern Branch.]

ON THE EFFECTS OF IODINE ON THE GLANDULAR SYSTEM.

In our journal the question has been asked,—Whether atrophy or absorption ever takes place in the glandular system from the use of iodine? In answer to this question, I would beg the favor of the present members of the Society to allow me to make a few remarks, the result of many years' attention to this point. From 1834 to 1844 a great many patients, suffering under secondary or tertiary syphilis, were admitted into St. Thomas' Hospital, more especially under the care of the late Dr. Williams, who had gained a high reputation in the treatment of these morbid symptoms. Most of these patients came under my notice and particular observation, and many of the remarkable cases were entered in my note-book, but not one instance of atrophy or absorption of the large glands, occurred in our experience. It was thought advisable, on the recommendation of Lugol, to test the efficacy of the iodide of potassium in scrofulous enlargement of the glands, and in order to give M. Lugol's method of treatment fair play, a most characteristic specimen of these affections was selected. A young woman, fat, florid, and fair, aged 18, was admitted with suppurating glands at the angle of the jaw, and others approaching suppuration, or hard and inflamed, extending to the chin, were conspicuously prominent. Eight grains of the iodide of potassium, in camphor mixture, were prescribed, and steadily administered, for nearly six months, without the slightest perceptible effect upon the scrofulous mass of glands, and she was presented in much the same state as at her admission. Now, it happened that in this girl the breasts were largely developed, but no change was produced in their size by the treatment adopted for the scrofulous ailment, notwithstanding the full dose, and prolonged administration of the iodide.

There were at this period, before the treatment had become generally known, innumerable cases of syphilitic periostitis, in which the iodide

of potassium was very successful, and yet we never witnessed atrophy or absorption of either the breast or testicle during the use of this remedy. A case of simple hypertrophy of the breasts was then made the subject of experiment; eight grains of the drug were taken, steadily and continuously, for three months, but no diminution of the mammae took place.

A boy, aged 12, presented himself with immensely enlarged tonsils, and took the iodide nearly six months, without any impression having been made upon these organs. It would weary you to bring forward further illustration on this subject, and this negative kind of argument is, I am aware, not perfectly satisfactory, and may be destroyed by a single example of the positive power of the remedy in causing absorption of either the breast or testicle; but ten years' observation in a large hospital, failed to furnish me with a single proof in favor of the opinion that atrophy or absorption of the glandular system, in its normal condition, arises from the use of iodine in any form. Experience as to the topical application of this powerful agent, involves an inquiry into the effects of friction, stimulation, protection, and warmth, and excludes all inference as to its specific property. It must be confessed, that enlarged testicles not unfrequently yield to its influence, but it will be found, on inquiry, that in these cases the system has been contaminated by the syphilitic poison. The same remark is applicable to chronic induration of the inguinal glands. It is a very remarkable fact, that the swelling of the thyroid body, in common bronchocele, vanishes under the internal use of iodine, especially the iodide of potassium. The rapidity and certainty of its removal are equalled only by that of the venereal node; and I have sometimes thought that there may be a vital elective attraction between the iodine and the lime, which latter forms the basis of the nodal tumor, and is, probably, the chief element in the thyroid enlargement.

It still remains to be explained, how it happens that tumors, enlargement and thickenings of a nature other than have been noticed, disappear under the use, topical or internal, of the remedy in question: the explanation is undoubtedly difficult; but I may be allowed to remark, that there is an absence of permanency in the glands generally, the thyroid disappears spontaneously, the tonsils naturally at puberty, the breasts in advanced age, and sometimes the testicles and ovaries; and there are few practitioners who have not met with cases of absorption of the breasts and testicles from some unknown cause, and in morbid instances, when no medicine has been taken. I have over and over again known and seen large swellings vanish under the long-continued application of a poultice, or wet lint and oil silk; and an equal number of failures, where iodine, internally and externally, was had recourse to, have occurred to me.

I recommend this subject to my medical brethren, and I do not hesitate to say, that they will confer a great boon upon scientific medicine by determining, with certainty, the value and effect of iodine in the cure of disease.

ON THE PROPERTIES OF KOUSSO.

Much difference of opinion still exists with regard to the specific property of koussou, or the *Brayera anthelmintica*. It has been lauded by some as universally efficacious in the treatment of tape-worm, whilst by others it is described as inferior to either turpentine or the preparations of male fern. My attention has been drawn to this subject, more particularly of late, from learning that the price of the drug has undergone considerable diminution, and that we are likely to have a regular, abundant, and cheap supply from Abyssinia. My first patient gave *one guinea* for two doses of half an ounce each. The traveller, Mons. Rochet d'Hericourt, charged M. Simon, his agent in London, £1 15s. per ounce. He had in his possession 1400 pounds, which, at even £1 10s. per ounce, would have produced him the enormous sum of 22,400 guineas. The ordinary price of the bruised flowers and leaflets, of which I have brought a specimen for your inspection, is two shillings the ounce. It is prudent to order the drug in this form, rather than as a powder, adulteration in the former case being more difficult of accomplishment.

I have not hesitated to prescribe the koussou, at its present reduced cost, even to my dispensary patients, and the cases about to be related, encourage me to hope that much benefit will be conferred upon the poor by its employment, (for it is they, chiefly, who suffer from the disorder,) and that ultimately it will be a recognised article of the *materia medica*. I now beg to read a case or two by way of illustration.

Case 1.—A girl, aged 15, came under my care at the Clapham General Dispensary, for worms; she had been suffering from this cause nearly six years, and had undergone a variety of treatment, which had been partially efficacious in having brought away long portions of *tænia*; but the head could never be discovered in the evacuations. It often happened that, after taking a strong purgative, she passed fifteen or twenty feet of her internal enemy, and yet long pieces were evacuated every week or ten days. Her night dress frequently contained some of the articulations, and she was occasionally obliged to leave school for the purpose of having extruding portions removed.

Having taken large doses of the spirit of turpentine in gruel, many times, and five grains of the sulphate of iron, with a drachm of salts, three times a day for several months, without avail, she discontinued her visits to the dispensary, and placed herself under the care of my friend Mr. Angers, as a private patient. It was then determined to administer the koussou, and a dose was procured at considerable expense—namely, one guinea. It proved entirely efficacious; an immense mass of the worm came away, in which, after a most careful and minute examination, the head was discovered. This part might easily escape observation, owing to its minuteness; it appears singularly disproportionate to the size and length of the animal, not being much larger than a pin's head. It is characterised by four black points like eyes, but which are really suckers, by the aid of which this parasite worm absorbs the chyle contained in the intestinal canal. I preserved this part of the

animal for many months, in spirit of wine, but unfortunately my servant, by mistake, threw it away, to my very great annoyance. The first dose given to this patient answered the purpose, but it was thought advisable to repeat it, and accordingly another half ounce of the powder was infused in hot water, and taken the day after a gentle purge of castor oil. The whole of the worm seemed to have been removed, for the kousso acted gently, as before, upon the bowels, but no articulations were found; the patient remained free from further inconvenience. This patient had been under the most eminent worm doctors in the metropolis, without benefit.

Case 2.—Miss T., aged 12, had suffered for three years from tænia, and taken turpentine, senna, calomel, and the usual drastic doses. The first dose of the kousso fully answered the purpose, for, although the actual termination of the worm was not obtained, the mass was traced to a fine point, slightly jagged, and the patient has been free from the symptoms of the disorder a very long time. A second dose was given in this case also; it acted gently, as the first had done, but the motion contained nothing remarkable. The price had now been reduced to four shillings.

It would be easy to multiply evidence on this subject, from the experience of my professional friends, but the two cases now brought forward are sufficient to prove that the *Brayera anthelmintica* deserves a place in our materia medica, and a constant moderate price is the only circumstance wanting to bring it into general use. It will be observed that its success did not depend upon the activity of its purgative quality. The action was gentle, and far less severe than that of the inefficacious drastic remedies which had preceded it; we must therefore conclude that its operation is specific, and, like all specifics, it will occasionally fail. There are many varieties of the tænia, and it is not improbable that to some of these it does not prove poisonous, if its failure does not arise from adulteration. It seems to be a harmless thing, of no striking property in the human body when the worm is absent. I have given two drachms, infused in hot water, to persons complaining of abdominal pains, who formerly suffered from tænia, and it has moved the bowels slightly, and relieved the pains, just as an ordinary dose of rhubarb would do, and with no other perceptible effect. It is now pretty generally known that the *Brayera anthelmintica* was discovered by the traveller Bruce; it is classed amongst the *Boraceæ*; and by De Candolle, in tribe v., *Dryadeæ*. It grows in Abyssinia to the height of twenty feet, and is cultivated everywhere for its anthelmintic properties. It is found in Tigre, Agame, and Shoa, and, according to Dr. Beke, through the entire table land of North Eastern Abyssinia. The bunches are gathered before the seeds are quite ripe, whilst still a number of florets remain unchanged. Its peculiar property resides chiefly in its bitter acrid resin, soluble in ether and in alcohol. The decoction strikes a dark green tint with a solution of the sesquichloride of iron. Dr. Pereira, from whose paper in the *Pharmaceutical Journal*, (Vol. x., No. 1,) much information on the subject may be gained, gives the following directions for its administration:—"The powdered flowers are

to be mixed with luke-warm water, (for an adult, about ten ounces,) they are allowed to infuse for a quarter of an hour, a little lemon-juice is then to be swallowed, and the infusion being stirred up, the whole is taken, liquid and powder, at two or three draughts, at short intervals, being washed down by cold water and lemon-juice. To promote the operation, tea (without sugar or milk) may be taken. In three or four hours, if the remedy has not operated, a dose of castor oil, or a saline purgative should be administered."—p. 24.

Not unfrequently, both in public and private practice, patients present themselves suffering from tape-worm; sometimes very little inconvenience is complained of, but generally there are distinct symptoms of the disorder. I am inclined to think that the popular notion is well grounded, and that, till the head of the animal comes away, the patient is not cured. There is seldom more than one worm, and yet portions are constantly being separated, which, if they possessed independent vitality, and the power of reproduction, would assuredly fix themselves on some other portion of the intestinal tube.

The Abyssinians feed upon raw meat, and to this rude practice may be referred the prevalence of this malady amongst these people. The cysticercus is found in the flesh of the pig and sheep in our own country, and if the tænia be a developed cysticercus, its origin here would be accounted for. Some very humorous, and yet instructive remarks on this subject are contained in the last *Edinburgh Monthly Journal*. It is more than probable that the ova of the tænia, the ascaris, and some other parasitic animals, find their way into the human body through the unprepared or uncooked materials of our food. And it may be further remarked, that a low degree of vitality of the system greatly predisposes it to their attacks, and hence the value of steel, and other tonics, by way of prevention and restoration.—*Prov. Med. and Surg. Journ.*

Lead Poisoning. Prof. FROST, of the Medical College of S. C., reports in the September number of the *Charleston Medical Journal*, several cases of *lead cholic* and other forms of *lead poisoning*, which, in his opinion, were clearly traceable to the use of water impregnated with some salt of lead, either taken from soda water reservoirs or from leaden pipes in other ways. As regards the asserted deleterious operation of acetate of lead in the ordinary medicinal doses (to which Dr. Jaynes, of Virginia, and others have lately called attention in the journals,) Dr. Frost avers that "he has never, in the course of his practice, known any injurious effects to arise from the use of this article."

On the Galbanum Plant.—By F. A. BUHSE. The author states, that in his travels in Persia he discovered the plant which yields galbanum. In June, 1848, he found it on the declivities of the Demawend. It is a ferula, from the stalks of which a liquid issues abundantly, by the odour and nature of which he immediately recognized galbanum, and his guides assured him, moreover, that galbanum is gathered from

this plant. The author has not yet distinctly determined the plant. It appears to differ from *Ferula erubescens* (*Annales des Sciences*, iii., Ser. 1844, p. 316.) only by the absence of commissural vitæ; but as neither Aucher-Eloy nor Kotschy, who have both collected the *Ferula erubescens*, make any mention of its yielding galbanum, the author is in doubt whether his plant be the same, or a variety of it. Don's genus *Galbanum* (Trib. *Sibrinæ*) and Lindley's *Opaidia* (Trib. *Smyrneæ*) do not agree with the plant seen by Buhse, unless that both of these authors have made their descriptions from imperfect fruits, or that there exist other plants which yield galbanum. The plant which Buhse describes is called, in some parts of Persia, *Khassuch* (not *Kasneh*, which means *Cichor intybus*, nor *Gäshnis*, which is *Coriand. sativum*), and appears to be confined to certain districts of Persia. In the whole large district of the Elburs-chain, from the south-east angle to the south-west angle of the Caspian Sea, it is only found in the neighbourhood of the Demawend; but here at an elevation of from 4000 to 8000 feet, and even on the declivity of the top of the Demawend. It exists neither on the mountains of Talysch, nor in the districts of Karadah and Tabris. It is said to re-appear on the Mount Alwend, near Hamadan, and in the neighbourhood of the great salt-desert. Near Hamadan, Aucher-Eloy has gathered his *Ferula erubescens*, and this supports the supposition that the author's plant is the same. In the salt-desert itself Buhse did not meet with it again. The inhabitants of the Demawend collect the gum-resin, which issues spontaneously from the lower part of the stalk; they do not make incisions in the plant; but it is not at this place that the galbanum is collected for commercial purposes. When fresh, the gum-resin is white like milk, liquid, and somewhat glutinous. In the air it soon becomes yellow, elastic, and finally solid. The odour is rather strong, unpleasant, and similar to that of our commercial galbanum.—*Central Blatt*, für 1852, No. xiii, from *Lond. Pharm. Jour.* June, 1852.

CHEMISTRY.

Lucifer Match Making and Amorphous Phosphorus.—The announcement of Professor Shrotter's discovery of the mode of preparing amorphous phosphorus, derived much of its practical interest from the supposition that the phosphorus in this state would be less dangerous and injurious to the persons engaged in the manufacture of lucifer matches. A medal was awarded to Mr. Albright for the introduction of the prepared phosphorus as an article of commerce, and it may now be obtained at a moderate price of Messrs. Sturge, of Birmingham. The dreadful disease to which the makers of lucifer matches are liable, from inhaling the fumes of ordinary phosphorus, having been described and brought under public notice, it might have been supposed that no time would have been lost in ascertaining the value of the above discovery as a means of alleviating so much human suffering. Matches prepared with the amorphous phosphorus were shown in the Great Exhibition, and it was stated at the time that in the manufacture of these

matches, the evils arising from the inhalation of deleterious fumes were obviated, while the result of the experiment was satisfactory.

It is, however, difficult to introduce any innovation of this kind into an extensive branch of manufacture. A series of experiments must be made to test the efficacy of the new preparations, the most advantageous mode of employing it, the quality of the goods, and the economy of the process. In the mean time the several departments of the manufactory are progressing like clock-work. All hands are busily employed, the proprietor is fully occupied with superintending the operations and the accounts, and a large box of amorphous phosphorus remains in the office unpacked, waiting for a convenient opportunity to complete the experiments.

Such was the state of affairs at Mr. Dixon's manufactory at Newton Heath, near Manchester, on the occasion of a recent inspection. Outside the building large piles of timber were stored up ready for use. A machine worked by a steam-engine was reducing blocks into the form of matches. A block previously cut the length of the match, and pressed against the side of the machine, disappeared in a few seconds. The sticks being removed into the next room were tied into bundles about eight inches in diameter, ready for dipping in sulphur. This was done in another room in an iron vessel over a furnace. Immediately after the dipping, the workman gives each bundle a slight pressure with a rotatory movement, to separate the matches from each other at the moment of solidification, otherwise the sulphur would cohere into a solid mass. The matches are next transferred into a room where they are arranged, so as not to be in contact with each other, in frames about two feet by one foot, ready for the phosphorus dipping. The composition used for this purpose consists of chlorate of potash, phosphorus, and glue, and it is spread in a thin layer on a stone or marble slab, heated below by steam or hot water. The operator holds the frame lengthways, and dips the ends of the matches in the composition, taking care that all of them are coated. Sometimes the sticks are in the first instance cut twice the required length, dipped at both ends, and afterwards bisected. In the process of cutting they occasionally ignite, occasioning loss and also vitiating the atmosphere. When the dipping is completed, they are taken to the sorting room and packed in boxes. In another room the boxes are labelled and sent to the packing room. The boxes are made on the premises, the shavings cut, and the tops and bottoms stamped by machinery, cut to the proper size, glued, and fitted, which operations are performed in separate apartments. Each box of lucifer matches, price retail one halfpenny, passes through the hands of seventeen persons, chiefly children. The Factory Act is not applicable to these establishments, and the children, averaging from seven to twelve years of age, work twelve and sometimes thirteen hours in the day. They earn (by piece work) from 3s. to 5s. a week, and the adults from 9s. to 12s.

The cases of disease occur chiefly in the phosphorus dipping room, sometimes in the room where the matches are sorted and packed in boxes, but seldom in other parts of the establishment. The nature of the

disease is described in the *Dublin Quarterly Journal of Medical Science*, for August, page 10, by Mr. Harrison :

"An affection ensues which is so insidious in its nature that it is at first supposed to be common toothache, and a most serious disease of the jaw is produced before the patient is fairly aware of his condition. The disease gradually creeps on until the sufferer becomes a miserable and loathsome object, spending the best period of his life in the wards of a public hospital. * * * * Many patients have died of the disease ; many, unable to open their jaws, have lingered with carious and necrosed bones ; others have suffered dreadful mutilations from surgical operations, considering themselves happy to escape with the loss of the greater portion of the lower jaw."

Mr. Harrison's paper contains much interesting information, with the medical reports of several cases.

It would be foreign to our purpose to enlarge upon this view of the subject ; but the disease being of chemical origin, the *modus operandi* of the poison may involve a chemical enquiry. Does the phosphorus when inhaled destroy the vitality of the bone by chemical action on its substance ? or does it operate merely as an irritant on the tissues, causing inflammatory action ? The bone in its diseased state has a spongy cellular appearance, with excrescences of a similar character adhering to it. The teeth generally continue sound and white, while the jaw which contains them is altered in texture, dead, and discolored. We believe the diseased bone has not been chemically examined. Whether such examination would throw any light upon the subject is a speculative question ; but we think it not unworthy of consideration.

There are at this time in the manufactory several persons who have suffered severely from the disease, and who on recovery immediately returned to their work—not however to the dipping department. In the Museum of the Manchester Infirmary is the lower jaw of a young woman who is now at work. Her face is much disfigured by the loss of her chin, and in looking into her mouth the root of the tongue is seen connected with her under lip, the space formerly occupied by the jaw being obliterated by the contraction of the check. A young man who has lost his jaw is also in the factory. They are not isolated cases.

It is stated in the factory that the workpeople have sometimes applied the phosphorus paste to decayed teeth, under the idea that it was a cure for the toothache, and to this imprudence some of the early cases of the disease are attributed. The frightful nature of the disorder is now sufficiently understood to serve as an incentive to greater precautions. Increased attention has been paid to ventilation and cleanliness, and the practice of taking meals on the premises is not allowed. It appears, however, from the statements of some of the workpeople who are engaged in the phosphorus dipping room, that their clothes become incandescent in the dark, and although the cases of the disease are less frequent than they have been formerly, a security against its recurrence is not attained. The proprietor of one factory states that he has had no cases in his establishment on account of a more careful method of dipping the matches, by which the face of the operator is further removed from the source

of danger; but we are informed that some patients, from that factory have applied for medical relief in the neighborhood. Mr. Standing informs us that there is now in the Manchester workhouse a young woman suffering from a "phosphoric jaw." She worked three years in a match manufactory; she then went to a silk mill, where she had been about a year and a half before the disease first made its appearance. Eleven months since she was admitted into the infirmary and remained there eighteen weeks, since which time she has been an inmate of the workhouse. The disease at present affects only one side of the jaw—a portion of which is likely soon to be detached.

Various means of prevention have been tried, and others suggested. In a manufactory in Dublin, camphor is added to the composition, which masks the smell, and is said to act as a prophylactic. This latter opinion requires further proof. Mr. Taylor, of Nottingham, suggests the use of a mask with a tube communicating with the outside of the building. Mr. Stanley, of St. Bartholomew's Hospital, recommends the exposure of oil of turpentine in saucers about the workrooms, as a solvent of the fumes of phosphorus. Dr. Baur recommends the use of a sponge or handkerchief moistened with a solution of soda or potash and applied to the mouth. The proprietor of the factory above referred to states that he has diminished the quantity of phosphorus to less than a third of that which he formerly used, and that by this and other precautions the prevalence of the disease has been greatly diminished. He has tried the amorphous phosphorus on a small scale, by way of experiment, and says that it is more expensive than the ordinary kind, as a larger quantity is required. But the chief objection appears to be that the composition now in use answers quite well. The matches never fail; the mode of preparing the composition is understood; the result is known, and the demand for the matches unceasing. The amorphous phosphorus requires further trial; the makers are not yet accustomed to it. If it should fail their trade would be injured; the experiment would interfere with the habits of the factory; therefore the operations are continued in the usual way, the box of Sturge's phosphorus remains unopened in the office, and the value of the discovery is not fairly put to the test.—*London Pharmaceutical Journal*, September, 1852.

Preparation of pure fatty acids for the manufacture of candles by the distillation of common fats.—At the last *Conversazione*, held at the house of the Pharmaceutical Society, a series of specimens were exhibited illustrating the process adopted at the works of Price's Patent Candle Company for obtaining a white and hard fatty substance, suitable for the manufacture of the best description of candles by distillation from palm oil and other cheap fats. The following description of the details of the process is given in the "Reports of the Juries" of the Great Exhibition.

Sulphuric Saponification.—About twenty tons of fat, say palm oil, are placed in a large lead-lined vat, and fused by a steam jet. The fluid mass, after being allowed to settle, has now to be exposed to the combined action of concentrated sulphuric acid and heat, and for this

purpose is pumped up into the acidifying vessel, in which its temperature is raised to 177° Cent. (350° Fah.) The means of heating is a jet of low-pressure steam, which, in its course from the boiler, passes through a series of iron pipes heated in a furnace. The quantity of acid used is in the proportion of 6 lbs. for 112 lbs. of palm oil. In this operation the palm-oil is decomposed and becomes much blackened. Withdrawn at that period it is seen that an important change has been affected by the action of the acid, as the mass now really crystallizes to a tolerably solid fat. The fat is now drawn off from the acid and transferred to the washing-tank, where it is boiled up with water by means of a steam-jet.

Distillation.—After one or two washings the blackened fat is withdrawn, and pumped up to the supply tank, which commands the stills. The stills which are made of copper, are heated by an open grate; each still is capable of holding five tons of fat. When charged the temperature is raised to 293.5° Cent. (560° F.), and low pressure steam passed through the mass. This steam is previously heated by passing through a system of iron pipes placed in a furnace.

The current of steam carries with it the vapor of the fatty acids, and thus facilitates the process. The mixed vapors of fatty acids and water pass together to a series of vertical pipes, which retain a temperature above 100° Cent. (212° F.) where the fats only condense while the steam passes to a second refrigerator, cooled by a current of water; here it is condensed along with the minute quantity of fat carried over by it. A separating tank, from which the water escapes at the bottom, whilst the fats float on the top, serves to recover this small quantity.

Distillation of the Residue.—After continuing the distillation for a certain period, the residue in the still is transferred to another still, formed of iron pipes, set in a furnace, and there submitted to a much higher temperature, and a jet of steam more strongly heated. The residue left in these iron stills is a sort of pitch, and is applied to the same uses as ordinary pitch. By this means an additional quantity of fatty acids is obtained.

The fatty acids, as they run from the still, are used to a great extent for the manufacture of candles, without pressing, and form what are called *composite candles*, which possess all the advantages of being self-snuffing, but are more fusible and softer than the pressed stearic acid candles.

A large proportion of the distilled fats, however, is pressed, to make a better sort of candle, and for this purpose fifty hydraulic presses are employed.

Cold Pressing.—The fats are spread by ingenious machinery on woven mats, and submitted to powerful cold-pressure between iron plates; the oleic, or metoleic acid runs out, and is collected, and chiefly exported to Germany, where it is employed in soap-making.

Hot-Pressing.—After cold-pressing, the fat acids are subjected to hot pressure in hydraulic presses, confined in a chamber heated by steam. The pressed cakes, after the removal of the edges are melted in contact with a little diluted sulphuric acid, and run into blocks. When the reporters visited the works the Company were distilling at the rate of 130 tons of palm-oil per week.—*Ibid.*